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THE UNIVERSITY OF ALBERTA

MEANINGFUL LEARNING AND THE DEVELOPMENT OF A SELF CONCEPT

by

GLORIA M. BURIMA SIPERKO (C)

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

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FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Meaningful Learning and the Development of a Self Concept" submitted by Gloria M. Durima Siperko in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Educational Psychology.

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Date March 1, 1976

DEDICATION

This thesis is dedicated to my three children: Keesa Rebecca, Kelee Nena, and Kai Erich; in the hope that I may help them to experience meaningful learning and to develop positive self-concepts.

ABSTRACT

The three main purposes of this thesis were: first, to define meaningful learning processes; second, to review the methodology associated with observing interactions (process), to measure self-concept change, and to define the methodology to be used; and third, to relate meaningful learning processes to an indication of the learning product.

A valid and reliable category scheme and accompanying methodology were developed for identifying meaningful learning processes and supportive/nurturing educator behavior with young children, using an observational technique. A valid and reliable index of self-concept change was developed for young children.

Two expectations were stated on the basis of the literature review. Expectation I was supported by the thesis findings, that is: it was concluded that meaningful learning processes for a young child will more likely take place in interactions with nurturing and supporting educators.

Expectation II was not supported by the thesis findings, that is: it was concluded that meaningful learning processes for a child in interaction with an educator did not seem to be consistently related to the development of a more positive self-concept for the child. However, some indication was found (for three out of the six

selected boys in this thesis) of a relationship between meaningful learning processes and the development of a more positive self-concept.

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It must also be noted that Dr. Diane Anderson assisted in finalizing the interaction analysis category system developed and completed the coding of the child-teacher interactions, in the Cooperative Early Childhood Education Project Evaluation Study, which was used as a basis for this thesis.

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CHAPTER I

INTRODUCTION

The focus of this thesis is three-fold:

(1) defining meaningful learning processes;

(2) reviewing the methodology associated with observing interactions (process), measuring self-concept change, and defining the methodology to be used; and

(3) relating meaningful learning processes to an indication of the learning product.

The child and the others he relates to (including educators) bring to their interaction many characteristics. The self-concept of the child and the supportiveness of the educator could be some of the most important characteristics. These characteristics will influence the interaction between the child and educator, and will be related to many different learning experiences and processes.

It is assumed that there are a number of different processes of interaction that will lead to a number of different child development outcomes. Some of these interaction processes will be more desirable, and have better consequences in terms of child development, than others. This thesis goes into a detailed discussion of the methods that can be used to define interaction processes. On

the basis of this discussion and literature review, the best-suited methodology will be selected.

The self-concept of a child not only influences his interaction with others, but the interactions with others (especially significant others, like teachers and parents) also influence the development of a child's self-concept. The development of a more positive self-concept defines one of the product variables of a meaningful learning process; it is also one indicator, or aspect, of the affective development of the child.

Therefore this thesis will consider the theoretical issues of defining meaningful learning processes for the young child and the relationship of these processes to an indication of the learning product (in the affective domain). This thesis will also consider the methodological issues of how interactions between educators and young children can be mapped and how the learning product of these interactions can be measured in the affective domain.

CHAPTER II

THEORETICAL/METHODOLOGICAL ORIENTATION AND REVIEW OF LITERATURE

A discussion of the literature in the following general areas will be presented below: the process of meaningful learning; curiosity and initiative behaviors as indicators of meaningful learning processes; mapping the interaction between educator and child; methods and indicators of meaningful learning processes; reliability and validity of an observational technique; a change in self-concept - an indicator of affective (social-emotional) development. These areas define the major concerns of this thesis: what are meaningful learning processes? Are meaningful learning processes linked to curiosity and initiative behavior? How do you define whether meaningful learning processes are occurring? What are the methodological concerns that accompany developing instruments to measure the isolated variables?

II. The Process of Meaningful Learning

This thesis will deal mainly with defining a meaningful learning process and look at one type of product that may have some implications as to whether the process was meaningful.

In any discussion of meaningful learning the writing of Ausubel certainly applies. It is important, therefore, to begin with

a statement of what ways the concerns of this thesis differ from the concerns that Ausubel has.

For Ausubel meaningful learning is the opposite of rote learning. He describes "meaningful learning" as referring " primarily to a distinctive kind of learning process, and only secondarily to a meaningful learning outcome - attainment of meaning - that necessarily reflects the completion of such a process" (1965, p. 91). When can this learning process be termed "meaningful"? The answer must take account of two interdependent variables: on the one hand, the nature of the task; and on the other, the "learning set" of the learner. The nature of the task, or the content of what is to be learned, sets limits to the meaning that can be attained and thus determines in part the degree of meaningfulness of the learning process. For example, the concept of gravity is potentially full of meaning, because its implications and ramifications can open up an ever-widening circle of related concepts and new observations. On the other hand, a list of nonsense syllables is almost totally without any potential meaning. However, if the learner has a "meaningful learning set" (which is the term used by Ausubel),then even nonsense syllables will have some, though at best not much, meaning; that is, the material may become organized into patterms, or associations with recognizable words may suggest themselves. Conversely, if the learning set is to memorize by rote the presented material on the concept of gravity verbatim, then this potentially most meaningful concept will have as little meaning as the nonsense syllables. The process of meaningful learning, according to Ausubel, is meaningful to the extent that it con-

sists of integrating new information into existing cognitive structures and therefore changing those structures.

To recapitulate: Ausubel's focus is primarily on the process of (meaningful) learning; the "outcome" - which, as we shall see later, must not be confused with what usually is called "product" - is secondary.

Ausubel's emphasis on processes of learning can be explained by the purpose of all his investigations; the purpos- is to promote intellectual development. This is evident from the entire context in which he places his discussion, as can be seen for instance, in the following statement:

> "From the standpoint of promoting intellectual development, no theoretical concern is more relevant or pressing in the present state of our knowledge than the need for distinguishing clearly among the principal kinds of cognitive learning ..... that take place in the classroom" (1965, p.89).

For Ausubel promoting intellectual development means developing and changing cognitive structures. "Attainment of meaning", which in the statement quoted above is described as "outcome", is an integral part of the meaningful learning process, that is its end-stage or the "completion of the process". The import of Ausubel's statement is that attainment of meaning "necessarily reflects the completion of such a process". In terms of the usual distinction between process and product, the "product" is a change in cognitive structure which enables the learner to incorporate new content.

Another distinction made by Ausubel is that between reception and discovery learning. He stresses most strongly that this distinction must not be confused with the distinction between rote and meaningful learning because each distinction is an "entirely independent dimension of learning": both reception and discovery learning can involve "meaningful learning processes".

The critical attributes that distinguish reception learning from discovery learning are best described in Ausubel's own words:

> "In reception learning ..... the entire content of what is to be learned is presented to the learner in final form. The learning task does not involve any independent discovery on his part. He is only required to "internalize" the material ..... that is presented to him, i.e., make it available and functionally reproducible for future use. The essential feature of discovery learning ....., on the other hand, is that the principal content of what is to be learnt is not given but must be independently discovered by the learner before he can internalize it" (1965, p. 89).

The point to be noted is that in Ausubel's view both discovery learning and reception learning qualify for being considered as "meaningful learning processes" in that what is to be learnt becomes "internalized" or, more explicitly, becomes "available and functionally reproducible for future use". This seems to imply that for the meaningful learning processes as defined by Ausubel, a more active role (such as discovery learning encourages or demands) is not essential.

This latter point may be valid for learners at the secondary school level. Indeed, it is one of Ausubel's contributions to have clarified a great deal of fuzzy thinking about the assumed merits

of discovery learning and the assumed disadvantages of reception learning. However whether what applies to the learning of students at the secondary school level also applies to young children (who are the object of concern in the present thesis) has not been proven. In fact, Ausubel suggests that direct, nonverbal contact with data is necessary for elementary aged children, because of their inexperience with verbal concepts. This point will be discussed further below.

We can now delineate in what ways the concerns of this thesis differ from those of Ausubel. For Ausubel, meaningful learning processes bring about changes in cognitive structure. The position taken in the present thesis is that, in the case of the young child, it is more important ot look at the changes in affect and emerging self-concept that result from meaningful learning processes. Affect and self-involvement are a feature of all learning; in the case of the young child particularly so.

Learning can be meaningful at different levels, which can be seen as a continuum of the amount of self involvement or a continuum of cognitive-affective development. An example which is a good explanation of how the cognitive-affective continuum is related to the learning process, is found in Schmidt (1973). Here one of Piaget's observations is described and Schachtel's comments on these observations are stated. Piaget (1950) observed "object constancy" in his observation of infants. Schachtel (1959) states that the attainment of the object-constancy concept is not purely cognitive development, but also an indication of "activity-affect". Activity-affect indicates a drive or interest in objects which is not purely cognitive. Schmidt

goes on to say that "if no feeling were attached to our ideas of objects and events, they would be 'meaningless' to us". Learning is meaningful in that it covers not only the integration of new meanings into the cognitive structure, but also includes a high measure of affect or feeling that relates very personally to the self of the learner.

Let's return to the role of activity and self-initiation in learning. For a young child an active role in learning appears to be very essential in the development of key understandings. The main reason why an active role is necessary in order for a young child to learn new concepts is that young children learn mainly through doing; that is, through their play activities and manipulation of objects. Young children have rather short attention spans and will more likely focus on learning if they themselves can maintain their own attention. White (1972) talked extensively about the important role of play and uninhibited explorations of environments in the development of young children who would be more successful in school. Navarra (1955) describes, in an observational record, a child's very active acquisition of scientific concepts. The child was seen confronting objects while his parents assisted by structuring the child's environment and helping him clarify his experiences in his environment. Another example can be seen in six year old Kelee who could not grasp the meaning of "What plus 3 equals 5? that is, $\square + 3 = 5$?", until she was given fifteen pencils and told: "I have three pencils. I want to have five pencils in all. How many pencils do you have to give me so that I can have five pencils in all?". When Kelee became ac-

tively involved in the problem solving approach using pencils, she was then able to identify with the concept and incorporate it into her cognitive structure along with her feelings about the learning situation.

The next question is: does initiation in a learning situation (an active role) more likely lead to integration of knowledge, or is initiation irrelevant? Some of the literature in this area suggest that a more active role produces better long-term retention in the cognitive domain. Ross and Balzer (1975) found that questioning and answering questions promoted the "acquisition and retention of information" for primary grade children. The Ross and Balzer (1975) findings supported Berlyne's (1970) theory, which stated that when children ask questions they are seeking information or wanting to learn. The Ross and Balzer (1975) study also lends support to Bruner's (1961) suggestion that when a child is given an answer to a question inspired by his own uncertainty, the information received will be more easily integrated into the child's present cognitive structure than in the situation where the questions are raised by others. Also, Zivin (1974) found that forcing a child to focus on an object does not make it more interesting to five to seven year olds, and in fact dampens exploration. In Navarra's (1955) study, the parents of the young child that was observed, found that the child was most interested in learning when the parents were non-directive in their involvement. Navarra suggested that children should be given much opportunity to develop their own understanding of concepts; and

that many times too eager parents can hinder concept development for the young child by too directly and finally answering the child's questions. In fact Navarra found that if the child was forced or pushed into talking about what he was doing, "superficial replies were obtained". Wolff, Levin and Longobardi (1974) found that the optimal learning for a child under six years old is very active and experiential, and involves both the perceptual and motor systems in a "closed-loop feedback relationship to each other". Wolff, et al investigated the difference in immediate and long-term retention between performers and observers in a paired-associate recognition task. The observers learned as well as the performers in the immediate retention interval; however, the performers were shown to retain more after twenty-four hours. Therefore the authors concluded that retention is best when the child can not only be actively involved but also observes the effects of his activity. The position in this thesis is that learning processes which result in long-term affective development are even more likely to actively involve the learner than learning processes which result in cognitive development processes. Allport's discussion of learning is the basis for this position.

Learning processes have been described and defined in many different ways. However, one very basic difference in an understanding of the learning process becomes apparent when Allport's theory of learning and the development of self, and Roger's "self theory" are compared to the positions which hold that learning processes are "modifications of behavior", as in Hall and Lindzey (1957); or are "the acquisition of responses", as in Deutsch and Krauss (1965);

or as Ausubel (1968) has termed learning as a change in cognitive structures.[1] Gagne (1967) defines the learning process as a change in performance, retained over a period of time, and therefore a change in the capability of the learner. Gagne sees learner motivation as a necessary condition for learning to occur but defines motivation as the "willingness to enter into the learning situation". Traditional motivation (conditioning theory based) can be seen to be concerned mainly with punishments and rewards. However, it is suggested in this thesis that the motivation of help for understanding one's social and physical environment, and how one fits into this environment in terms of added understanding about self, is more pervasive.

Allport (1967) defines learning as a self-actualization process where personality advances toward the fulfillment of the individual's plans and hopes.[2] Allport breaks down learning into: (1) quasi-mechanical (S-R) learning which does not actively involve the intellect, (including differentiation and integration); (2) cognitive or organizational learning which brings in the role of conscious weighing, understanding, intentions, etc. (including learning

[1] Mednick (1964) defines the learning process as:
"... resulting in a change in behavior,
... a result of practice,
... a relatively permanent change, and
... not directly observable." (p.18)

[2] Maslow (1968) also defines the development of self as the development of a person to "a whole", which is related to a gestalt-like approach to learning. Maslow discusses the development of the self-actualized person, who is developed in himself according to his changing specific needs.

sets, insight, identification and subsidiation); and (3) participation (or biographical) learning which requires the "concentration, effort, sustained attention or absorbing interest" of the learner. The participation type of learning is where the child developes a sense of self to fit into a self-system, and where a "search for autonomy" within an environment also occurs. Allport discusses an inherent link between learning and the development of a sense of self. Allport assumes that every child has an innate latent capacity to develop a self, and suggests that learning which leads to an understanding of self is most meaningful to the learner. Allport (1955) suggests that from the ages of three to five the child starts to develop a self or personal identity, and launches out on the process of becoming. However, it is important to consider that this stage of "readiness to become" can be arrested by not successfully completing the prior stages of socialization (i.e. as a result of lack of security and affectional relationships). The product of a meaningful learning process can be meaningful in degrees of a continuum of cognitive/affective development. This thesis will follow along Allport's suggestion, that development with emphasis in the affective domain is most meaningful to the learner. Therefore the meaningful learning product indicator used in this thesis will focus on the affective domain.

It is important to understand the difference between active and passive involvement in learning as discussed on pages 5 to 8 above. Allport (1955) stated that under the Lockean tradition the intellect was looked upon as a passive recipient; however under the Leibniz tradition, the intellect was seen as an active agent, self-propelled and

committing purposive acts towards an understanding of self. In the Hall and Lindzey (1957), Deutsch and Krauss (1965), and Gagne (1967) sources the learner is seen in a passive, acted upon, role. Gewirtz (1968) defines the child as an "active organism" in interaction with his environment because of the child's demonstrated: "(1) search for stimulation, novelty, complexity and variety of stimuli, (2) curiosity, (3) exploration, (4) intrinsic motivation in objects, and (5) manipulation of objects". Therefore, the orientation of a theorist as to the role played by the learner, is based on his assumptions about the learner's activeness in the learning situation.

Allport suggests that the quasi-mechanical type of learning theories do not acknowledge that after infancy very little conditioning or rewarding is effective unless the learner wants to learn, and the conditioning is then merely a starting point. The participation learning process includes two levels of attention and concentration: task-involvement and ego involvement. The ego involvement type of learning is learning used in the development of the individual's personality and learning that fits into the learner's "self-system". Allport (1943) has suggested that in the ego-involvement condition, the entire personality is in congruence and shows a consistency in behavior. Allport (1967) sees personality development as the centre of the psychology of learning, which is defined by our view of man. If man is viewed as an active agent in his surrounding, then participation will be viewed as basic to learning; which defines the difference between Allport and Rogers, and the other learning theorists whom Allport defines as Quasi-mechanical or Cognitive-organizational.

Rogers (1967) has defined two major types of learning: cognitive learning - "primarily the fixing of certain associations", and experiential learning - primarily significant or meaningful. The following elements were defined as involved in experiential or meaningful learning: (1) a quality of personal involvement - the whole person is involved in the learning event, (2) self-initiated - the sense of discovery, etc. comes from the individual, (3) pervasive - affects the behavior, attitudes and personality of learner, (4) evaluated by learner, and (5) meaning is its essence - element of meaning to the learner is built into the entire process. Significant learning is defined to take place when: (1) the material to be learned is perceived by the learner to be related to his own purposes, (2) the learner is actively involved in the learning process, (3) the learning is self-initiated, and the learning involves the whole person (feelings and intellect), (4) the learning situation is free from other's criticism, when self-criticism and self-evaluation are primary, and the learner feels accepted for himself, and (5) the learner is confronted with a problem which is "meaningful" to him. In an earlier source, Rogers (1961) suggested that a child becomes more self-directing, socialized and mature through accepting, understanding and generally positive relationships with others. Rogers also suggested the assumption that the basic motivation for creativity is man's tendency to actualize himself and to reach his potential. Three conditions were listed as fostering constructive creativity: (1) acceptance of individual, (2) absence of external evaluation, and (3) empathic

understanding. These three conditons also defined psychological safety and freedom.

Moustakas and Perry (1972) defined meaningful learning as exciting and unique, and a personal adventure, increasing self knowledge. Moustakas and Perry have suggested that genuine or real learning requires commitment, involvement, and active participation of the learner; and have also suggested that in order to develop meaningful learning, teachers should encourage children to "... initiate and determine their own learning...". "True learning reflects the self of the learner, not the self of the other." (Moustakas and Perry, 1972).

A "gestalt" approach is very useful in attempting to link the learning experience of the learner to the circumstances and situations accompanying the learning. Siegel and Siegel (1967) focus on discussing "instructional gestalt"; and develop a theory of instruction integrating teacher and student behavior, and all factors interacting in the classroom environment. The learner comes to a learning situation with a background of experiences and abilities, expectations and needs. These characteristics could dramatically influence the learning situation. In Watzlawick's (1967) discussion of relationships between parts to make up a whole in an open system of communication, he also identifies a gestalt approach. A change in part of a system will influence a change in the total system. A system is defined as an inseparable whole, which implies the non-summativelity of parts in a system. With these relationships in mind, as will be discussed later, it seems the composition of the factors that influence a child's development are very complex, and the relationships between factors may

in reality be reciprocal. What is suggested in this thesis is that there are some major factors to consider, and an attempt will be made to identify these factors in a complex of interacting systems.

Two prime conditions for learning (change in behavior) were defined by Withall (1949) as: (1) the experiences had to be meaningful to the learner - "perceived by the learner as pertinent to his needs and purposes, as consistent with his personality organization, and as associated with self-directive behavior"; and, (2) the experiences are to occur in a non-threatening situation - where "the learner is free from a sense of personal threat, interacts with others in a wholesome social milieu, and is helped to evaluate himself on the basis of objective criteria" (p.347). The Withall article clearly amplifies the need to describe a meaningful learning process (as indicated by curiosity or initiative behavior) in terms of the educator (adult) response. However any particular interaction (process) is not the only influence on a learning situation. This is where the importance of presage variables comes in. For example: if the child happens to be in an interaction with an educator that is not particularly supportive, this could have drastic implications for his learning or only mild implications. The extent of the implications is based on the influence of the presage variables (how positive a self-concept the child had before he entered the present interaction) and how much support is available from others outside this particular interaction.

Summary

From the literature review on the process of learning, the following list of summary characteristics of meaningful learning processes was developed. The characteristics are related to each other, but certainly are not identical.

1) the child is actively involved in the learning process (Moustakas & Perry, 1972; Rogers, 1967; Schmidt, 1973; Ross and Balzer, 1975; Zivin, 1974; and Wolff, Levin and Longobardi, 1974).

2) the motivation for the learning comes from the learner himself (Zivin, 1974), is related to his own purposes (Rogers, 1967), and needs (Maslow, 1968; Allport, 1967; and Withall, 1949), and may result in new needs being created (Maslow, 1968).

3) the learning is self-initiated (Rogers, 1967; Moustakas & Perry, 1972).

The following list, developed from the literature review, summarizes the characteristics of the supporting circumstances in meaningful learning situations:

1) the teacher or educator is needed to help the child explore and provide learning situations (Schmidt, 1973; and Ross and Balzer, 1975).

2) the teacher and child behavior are to be integrated (Siegel and Siegel, 1967).

3) the background of experiences, abilities, expectations and needs influence the learning situation (Siegel & Siegel, 1967).

4) learning results in the child developing a sense of self as a basis for personality development. Personality development is defined as involving innate latent capacities. This learning and development needs the help of the educator (adult) to become realized (Allport, 1967; and Rogers, 1967).

5) the learning takes place in situations free from others' criticism (Rogers, 1967; and Withall, 1949).

6) an accepting, understanding and generally positive relationship exists between the child and the educator (Rogers, 1961).

This entire list places emphasis on the child's interaction with his environment (including people), and suggests that the nature of this interaction affects the sense of self and the personality development of the child. It remains now to see how, in the research to be undertaken in this thesis, some of the concepts idnetified can be operationalized. This will be dealt with in Chapter III. In an attempt to summarize the above discussion, the model in Figure II.1 was developed.

Figure II.1

MEANINGFUL LEARNING

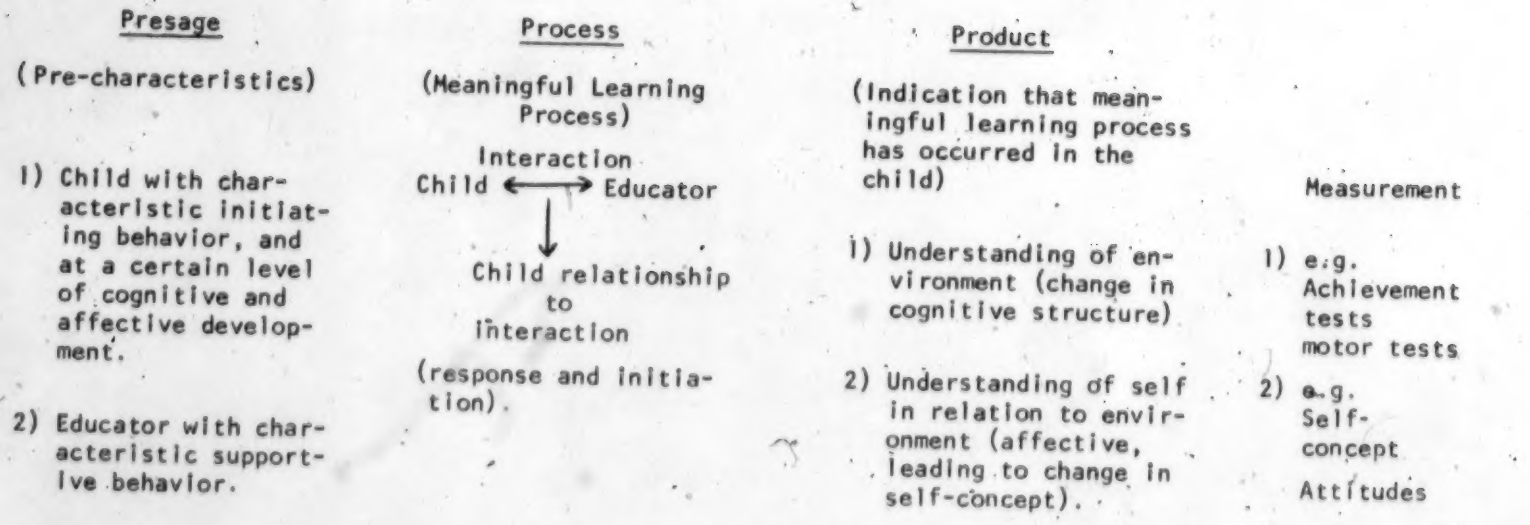

Presage
(Pre-characteristics)
1) Child with characteristic initiating behavior, and at a certain level of cognitive and affective development.
2) Educator with characteristic supportive behavior.
Process
(Meaningful Learning Process)
Interaction
Child ⟷ Educator
Child relationship to interaction
(response and initiation).
Product
(Indication that meaningful learning process has occurred in the child)
1) Understanding of environment (change in cognitive structure)
2) Understanding of self in relation to environment (affective, leading to change in self-concept).
Measurement
1) e.g. Achievement tests motor tests
2) e.g. Self-concept
Attitudes

Figure II.1 suggests that there are three types of stages involved in a meaningful learning situation. The presage variables on the left are characteristics a child and a adult have before they enter an educator-educand interaction. A child can already be variously characterized as to his/her self-concept and developmental levels. The educator can also be variously characterized as to amount and type of supportive behavior. The meaningful learning process occurs in the child/educator interaction. The child relates to this interaction in various responses and initiations. The product stage of meaningful learning can be seen as an indication that a meaningful learning process has occurred. This product is learning in interaction with a physical and social environment, and can be seen in either a new understanding of the environment (resulting in changed cognitive structures) or a new understanding of self in relation to the environment (affect, leading to change in self-concept). The last column in Figure II.1 identifies the two main ways that the occurrence of meaningful learning can be measured, in the cognitive and affective areas. A recent study by Larsen (1975) investigated the effects of teacher support (process) on young children's learning (product). Cognitive and motor tasks were used as indications of learning. The present thesis will focus on affective indicators of learning.

In summary, the aim of meaningful learning processes is to involve the child as a total being in his environment, and in his understanding of himself and his world. These processes always take place in interaction with others.

II.2 Curiosity and Initiative Behavior as Indicators of Meaningful Learning Processes

The development of the child has traditionally been linked to the displaying of curiosity and exploratory behavior (Piaget, 1952 and Erikson, 1950); and it has been suggested above that in a meaningful learning process, creative thinking will be maximized (Eriksen, 1962). The displaying of initiative behavior and high child involvement has also been linked with meaningful learning (Rogers, 1967; Moustakas and Perry, 1972; Allport, 1967, etc.). In the present section, a closer look will be given to defining curiosity and initiative behavior of young children.

A book by Maynard (1973) seems to be one of the best discussions on creativity in the literature. Maynard distinguishes between two kinds of creativity:

(1) "the special talent variety", which is attained through heredity, and

(2) "the instinctive urge to learn, grow, develop, which exists in every individual. Creativity in this sense is a drive toward wholeness and integration, toward realizing all one's potentialities". The second definition of creativity presented by Maynard is very close to what was defined as happening in a meaningful learning process. The child relates to his environment, and seeks to more fully understand himself in relation to his environment. Rogers (1961) has defined creativity along similar lines, as "to fulfil oneself as a person".

Maw and Maw (1961) define curiosity as:

> "instrumental actions which increase the organism's contact with environmental stimuli or as the degree to which a child reacts positively to novel elements in the environments by: (a) approaching them, (b) manipulating them, (c) seeking additional information by questioning, and (d) scanning the surroundings."

Minuchin (1971) defines two principal aspects of curiosity or exploratory behavior: "the sheer search for novelty" and "a response to uncertainty or dissonance". Minuchin also assumes that there is an inter-dependent relationship between an individual's self image and his exploratory behavior. Various measures of curiosity and exploration were instituted: observations in new preschool situations - which were coded for each child for evidence of approach or avoidance, alertness to new events, questions, exploration of objects and sensations; teacher and observer rankings on the basis of the Maw and Maw (1961) definition of curiosity; object-curiosity score - on presence of reaction to a curious object within a set time limit; and a checklist to map child explorations of "peripheral stimuli". Minuchin's findings suggest that exploratory behavior of young children can be reliably determined and this can be done within the natural process of a preschool program, as seen on an approach-avoidance continuum. Other significant findings were that a more differentiated and integrated self-image is related to higher curiosity, and generally

that the extent of curiosity and exploratory behavior is related to child development in the emotional and cognitive areas.

Saxe and Stollak (1971) found that the curiosity of first grade boys was most highly correlated with their mother's curiosity. This finding emphasizes the reciprocal influences operating between children and parents, even in terms of curiosity. In fact, Bandura and Walters (1963) suggest that curiosity behavior may be acquired through imitation or modelling, and that children may learn to imitate the curiosity behavior of adults around them (i.e. parents and teachers). Several indicators of curiosity were listed and suggested to be intercorrelated by Saxe and Stollak: attentive observation, manipulation of objects, variety of objects explored, interest directed toward novel stimuli, preference for novel stimuli, seeking information, and offering information. High curiosity was defined as exploration, investigation and manipulation of objects, asking questions, and expressing the need for added knowledge about self and environment.

Langeveld (1964) suggested that children learn through experiencing objects and things, which implies a certain level of exploratory or curiosity behavior. In experiencing objects Langeveld (1964) assumed that a search of what things mean to the child is the main intent. In connection with Langeveld's suggestions, Schmidt (1965) has suggested that learning (spontaneous formation of concepts) occurs when a child experiences objects. Schmidt also suggested that objects are experienced in the child's search for meaning.

An attempt has been made by White (1971 and 1972) to define "excellent early educational practices", and in this way define his perception of optimal learning situations and the development of competence in children (educable children). White (1972) isolated one and two year old children who it was predicted, on the basis of their siblings' performance and individual test results, would do either well or relatively poorly in formal education. Some conditions of optimal learning situations were found to be: an adult who functions as a "designer and consultant", nurturing curiosity by providing many manipulable and detailed objects; an adult who is "generally permissive and indulgent", i.e. not over controlling; and an adult who encourages exploration, encourages and reinforces self-initiated learning ("mostly acting in response to overtures by the child"), and talks a great deal to her child. Again, we find an identification of the link between an adult supporting and nurturing curiosity, experiential and self-initiated learning for a child, and the positive development of the child.

The findings from two more recent studies, Hanson (1975) and Elardo, Bradley and Caldwell (1975) support White's (1971, 1972) findings. Hanson (1975) found that parental involvement with the child on a longitudinal basis was highly correlated to I.Q. scores. Elardo, Bradley and Caldwell (1975) found that as early as twelve months of age, the provision of play materials and maternal involvement with the child were the most strongly related to child development, out of forty-five items. After twelve months it was found that the most enriching environments were where a variety of age-appropriate

materials were provdied for the child and where the socializer consistently encouraged and positively responded to the child.

Summary

The following list of characteristics was found in the above literature review as defining curiosity and initiative behavior of young children:

1) a positive reaction to novel stimuli (Maw and Maw, 1961; Minuchin, 1971; and Saxe and Stollak, 1971).
2) a response to uncertainty or dissonance (Minuchin, 1971).
3) can be learned through modelling or imitation (Saxe and Stollak, 1971; and Bandura and Walters, 1963).
4) asking questions and expressing a need for more knowledge to understand self and environment (Saxe and Stollak, 1971; and Maynard, 1973).
5) experiencing objects in search of meaning (Langeveld, 1964; and Schmidt, 1965).

The first three characteristics again identify the Quasi-mechanical (S-R) and cognitive types of theories (Allport, 1967), and see the motivation of curiosity as not involving the ego or self. However, Maynard, Langeveld, Schmidt, and Saxe and Stollak have focused on curiosity behavior to understand self and surroundings in search of meaning, and this emphasis will be incorporated in this thesis.

The following list presents the suggested relationships of curiosity and initiative behaviors to other related variables:

1) inter-dependent relationship between an individual's self-image and his exploratory (curiosity) behavior (Minuchin, 1971).
2) the extent of curiosity behavior is related to cognitive and affective development (Minuchin, 1971).
3) the presence of an adult who is "generally permissive and indulgent" (White, 1972).
4) the presence of an adult who encourages and reinforces exploration, and self-initiated learning (White, 1972; Hanson, 1975; and Eldardo, Bradley and Caldwell, 1975).

The above four suggested relationships identify a link between a supporting and nurturing adult fostering experiential and self-initiated learning for a child, which is related to the positive development of a child (including a more positive self-concept).

11.3 Mapping the Interaction Between Educator and Child

A number of theoretical descriptions of the interactions between an educator (parent or teacher) and a child have been presented above in attempts to define meaningful learning processes. The following selective review of the literature will focus on considerations of what should be looked at and how, in order to methodologically identify meaningful learning processes; and also to identify what interaction is. The present study will not attempt to

define all the behavior that occurs in the settings observed, but rather attention will be focused on behavior that identifies immediately meaningful learning processes for the preschool child. A specific research question is posed here: what are meaningful learning processes for preschool children; therefore, specific behaviors will be focused on, using the observation techniques most suited to the task. The interaction of children in a preschool setting can be characterized as relatively unstructured and active; which means that most of the literature on interaction analysis in more structured and closed systems is not directly applicable to this thesis.

Frank (1955) defined learning as a "circular, transactional process, involving the concomitant alteration of the organism and the environment as the changing organism selectively perceives the environment and progressively changes his perceptions and his relations to it". From this definition it is suggested that meaningful learning occurs through a reciprocal relationship (interaction) between the organism (learner) and the environment impinging on the organism to change it. The Charlesworth and Hartup (1967) study supports this; for they found that the more reinforcers a child gave, the more he received back.

Watzlawick's (1967) discussion of open systems of human interaction amplifies some issues dealt with here. The suggestions that interactions are nonsummative, non-linear, probably highly circular (in a feedback manner) and complex, present a number of problems in trying to identify factors in interactions that may affect child

behavior. This is directly contradicted by Yarrow and Waxler (1971), for they call for an analysis of "cumulative interaction effects", to describe the effect that adult behavior has on children, and the effect that children's behavior has on adult behavior. Watzlawick defines the understanding of interaction"results" as identifying the processes or "system parameters". For example, it is suggested that different inputs or combinations of inputs can produce the same results, or that the same inputs may also produce different results. Along with this, a recent study by Rose, Blank and Spalter (1975) found that consistent patterns of behavior can be mapped only in relation to particular situations, and not across situations. This does not suggest that the child's behavior changes from one situation to the next, but does suggest that there is a poor degree of predictability as to how children will behave from one situation to another. Also, Rosenshine and Furst (1973) suggest that a number of different teacher behaviors may produce the same student behaviors, and that there are a number of alternative procedures that may obtain the same result. Along these lines, the process of a learning experience will be analyzed in this thesis, with minimal attention paid to what in-put is given by educator or child; there will be mainly an attempt to describe how or why the input is given and what reaction is obtained, and to identify the outcome of the learning experiences (a demonstration of affective development, indicated by a possible change in the child's self-concept).

A number of studies have identified the necessity of analyzing interaction on a dyadic basis. Yarrow and Waxler (1971) stated that "adult interactions with individual children within groups varied noticeably", which suggests that the interaction of a teacher with a group of children can not be inferred back to any specific child. A thesis by Turner (1972) mapped the individual non-verbal interactions between a teacher and four preschool children, in an attempt to describe (both qualitatively and quantitatively) the interaction that takes place in a preschool setting. Cherry (1975) used teacher-child dyads in her research. English and English (1958) define social interaction as a relationship between persons where the behavior of one individual stimulates the behavior of the other. Sears (1951) defined a dyadic unit as describing the combined actions of people. Weick (1968) defines an interact as an "initiating act and an outcome". Baumrind (1968) used a sequence as her unit of analysis, which is an example of an interact. A "double interact" is an "instigation-reaction-subsequent act" sequence or cycle. Medley and Smith (1964) and Cherry (1975) used a double interact unit as: teacher question, pupil answer, and teacher evaluation of answer or acknowledgement. The double interact clarifies the intention of the original instigation or act. However, Weick suggested that cycle interactions are rare when children interact with adults, and that most of the interaction would be simple action and reaction.

Social interaction is defined by Dyck (1963) as:

> "when an action by one person is in some way responded to by another person, where each person is aware of the other and of the action in question, and when the action responded to is directed to or is about the person who is responding". (p. 80)

Weick (1968) acknowledges the difficulty in describing social interaction, and cautions for a close look at descriptive labels on categories of analysis and units of analysis to make sure that interaction is being recorded and not just "individual actions of persons who happen to be in the presence of one another".

A number of studies have documented the need to look at the interaction of effects of the relationships between children and adults. Cherry (1975), Smith and Green (1975), Bell (1968), Osofsky and O'Connell (1972), among others, have found that children influence parents' behavior as much as parents influence childrens' behavior. Bell has documented the research pointing to the discovery that the same adults react very differently to separate children, which has very significant methodological implications for the present study design. The usual variables used to attempt an explanation of differential attention are ordinal position and sex, but ordinal position does not apply to children outside of a usual parent-children relationship. A more appropriate explanation could be the state or actions of the child (congenital determinants). Klein (1971) found that not only do students influence the verbal and nonverbal behaviors of teachers,

but that positive teacher behaviors are associated more frequently with student growth than are negative behaviors.

Summary

A number of decisions as to the type of interactions proposed to be analyzed were outlined in the above section. These decisions will now be summarized in point form:

1) to focus on behavior that identifies immediately meaningful learning processes for preschool children.
2) to characterize interactions occurring in unstructured situations.
3) to focus on reciprocal relationships between learner and environment, interactions that are probably highly circular and complex.
4) to focus on how input is given by educator or child and received. Some attention will be paid to an indication of the outcome of the educator-child interaction.
5) to focus on dyadic (one-to-one) interactions, that is, an initiating act and an outcome reaction (an interact). The double interact will be used where possible.
6) to focus on one educator and several children. It is assumed that one adult (educator) can react very differently to separate children, depending on the child's personal characteristics and actions; which indicates there is a certain amount of variance of interaction between any one educator and a number of children.

II.4 Methods for Identifying Meaningful Learning Processes

There are a number of excellent articles that define the methodology and types of interaction analyses, in various ways. The two most helpful, clear and recent articles are by Rosenshine and Furst (1973), and Gordon and Jester (1973). These two articles will be used as a basis for identifying what types of interaction analysis methods should be used. The Robbins (1973), Coller (1972), and Lytton (1971) articles will be used as supporting sources.

Rosenshine and Furst (1973) have stated that the distinction between the variously defined observational techniques becomes less clear as more and more observation instruments are developed. However, careful consideration will be given as to the type or types of observation techniques used, for as suggested by Rosenshine and Furst, the type of instruments used may influence the results of the study. Rosenshine and Furst also suggested that the observational systems which appear to be "farthest from reality" also appear to be more predictive of the child achievement variables. However, it seems that all observational systems distort actual events, and that the best strategy may be to use a variety of instruments to observe teaching-learning behavior. The Rose, Blank and Spalter (1975) study used category scales and also a global impression rating for each child per observation. Rosenshine and Furst suggest "broad items and rating scales" to search for variables that correlate highly with outcome (product) measures, and "narrow, focused items" (category systems) for identifying the specific components of the significant items in

the "broader items". It was also suggested by Medley and Mitzel (1963) that individual process items by themselves may not be related to product items, but that the strength of relationships may be increased if items are put together in a composite scale. Gewirtz (1968) cautions against summary variables, because he states that they tend to emphasize "generalized responses" and neglect sequential contingencies and reciprocity of interactions. However, Gewirtz suggests that this type of summary variable may be necessary to "facilitate data processing". Rosenshine and Furst also suggest that if summary variables are going to be used in direct observation, then behavioral (operational) definitions of these variables are a necessity.

The most critical consideration seems to be defining what the interaction analysis information will be used for. Rosenshine (1970), in an earlier paper, suggested four potential uses of classroom observation instruments:

> "(1) assessing variability in classroom behavior,
> (2) assessing whether the teacher's performance agrees with specified criteria (training teachers),
> (3) describing classroom interaction, and
> (4) determining relationships between observed classroom behavior and outcome measures" (student growth).

The present study is most concerned with the last two listed uses of observation instruments, "describing classroom interaction" and "determining the relationships between observed classroom behavior and outcome measures". However what is to be observed in the classroom will not be restrictively applied to only classroom behavior, but all similar relationships between an educator and a preschool child.

Rosenshine and Furst (1973) described three types of studies that could be done using direct observation of teaching: (1) descriptive studies - the development of quantitative procedures for describing teaching; (2) correlational studies - the relating of descriptive variables to measures of student growth; (3) experimental studies - the significant variables isolated in the correlational studies are tested in more controlled situations. Since the study of experiential or meaningful learning in preschool children has not, to my knowledge, been attempted using an observational technique, a fair amount of emphasis will be placed on developing a quantitative observation technique. However, an attempt will be made to relate the isolated descriptive variables to a measure of student growth in the affective domain. Related to the decision to relate descriptive variables to measures of student growth, is the discussion of Gordon and Jester (1973) on the relationship of presage variables (pupil- and teacher-entering characteristics, and demographic characteristics), process variables (teacher-child interaction and other content factors), and product (or goal) variables ("immediate and long-term effects of pupils in both the cognitive and affective domains"). Gordon and Jester see the failure of most of the studies they reviewed to relate these three types of variables, as an indication of the poor state of our present knowledge of teaching in early childhood.

A recent study by Robbins (1973) has defined the presage variable as a "frame of reference filter", which is defined as the "perspective through which a person receives stimuli, and is dependent

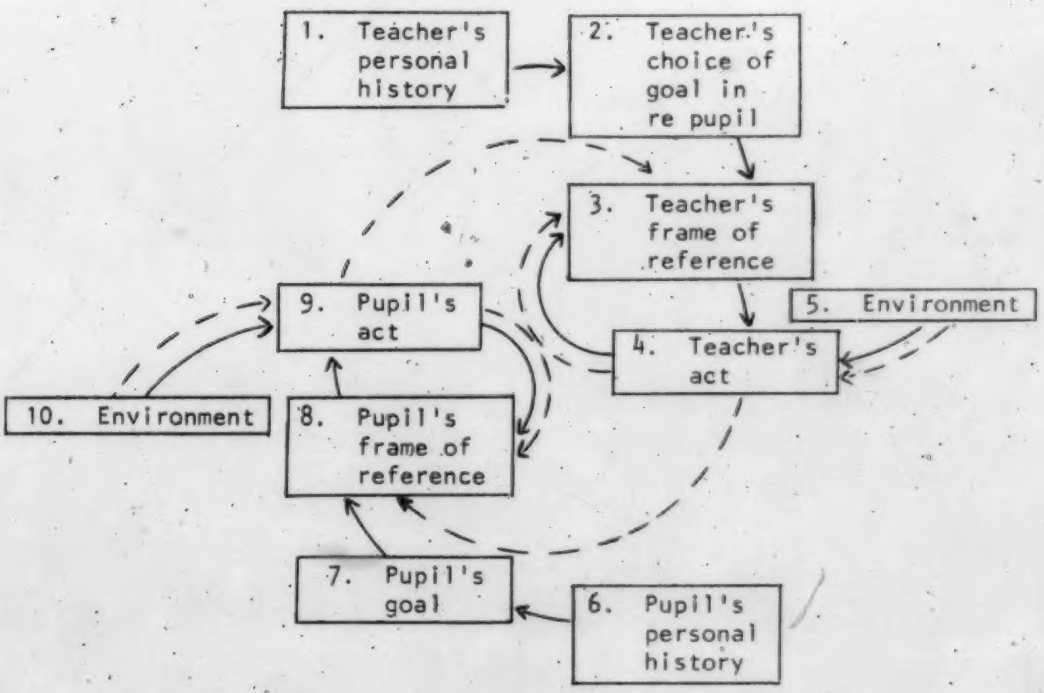
on the total background of that person", (p. 10). The place of this "frame of reference filter" has been schematized in Runkel's (1963) model for pupil-teacher interaction, which is reproduced in Figure II.2 below. This model also illustrates quite clearly the cyclical nature of the interaction between a teacher and a young child, which will be mapped in this thesis..

Gordon and Jester's (1973) description of the types of techniques of observing teaching in early childhood is one way of looking at the different recording procedures. Gordon and Jester based their scheme of organizing observation techniques on Wright's (1960) article. The following different types of observation techniques were defined:

1) Specimen description - "detailed sequential recording of all that is taking place in a situation". Coding or scoring is imposed after the data collection. This type of description is also called an open system because the raw data is preserved intact. Other types of description are included under the closed system, where the data is collected according to an imposed coding scheme. The following four techniques (numbers 2 to 5, inclusive) are closed methods.

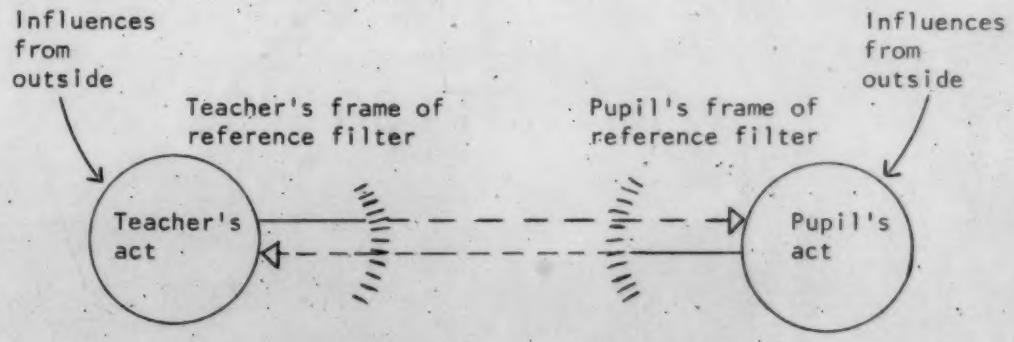
Figure 11.2

From: Robbins (1973)



A Brief Model for Pupil-Teacher Interaction

(Runkel, cited in Gage, 1963, p. 126)



A Brief Model for Pupil-Teacher Interaction

(Runkel, cited in Gage, 1963, p. 126)

2) Time/Signs - "behaviors are listed in the observer's record" and a frequency count of the occurrence of specific behaviors is made. The event is recorded only once if it appears within the specified time period.

3) Time/Categories - behaviors are grouped under a label, and each time an event occurs it is recorded. This means that the number of frequencies is restricted to the number of time periods. Rosenshine and Furst (1973) stated that the category scheme is more likely to portray reality than the sign scheme, because the sign scheme gives a greater emphasis to infrequently occurring behaviors. However, they also suggest that the sign scheme is more likely to predict student gain than the category scheme. Medley and Mitzel (1963) suggested the following guidelines for setting up category systems: (a) use a relatively small number of categories, (b) have the categories picking up some behavior that is relatively common, (c) if possible, the tallies should be based on natural units. If this is not convenient, the tallies should be based on brief time segments, (d) the categories defining behaviors should be obvious for the observers.

4) Event Sampling - "observer records behavioral events of a given class", coding what is happening immediately on occurrence.

5) Trait-Rating - longer periods of observation, followed by subjective observer judgements of underlying traits of those observed. This technique is called a rating instrument by Rosenshine and Furst (1973).

In the techniques that use time, the time interval can influence the frequency of observations. However, the techniques that do not use time (episodic or change) assume that all units are of equal length, again causing distortion. The category and sign systems traditionally contain low inference items, but it seems that all types of items can be used for both closed and open systems. Rosenshine and Furst recommend the inclusion of both high-inference (rating scales) and low-inference (category systems) items in future studies. Rosenshine (1970) defines the category system as more objective than the rating system, but defines the cost of observers and the necessity of defining variables before observation is carried out, as two major disadvantages of the category system. Rating systems are seen as offering greater flexibility and less expense; and, the entire situation to be coded can be viewed before a decision is made for coding behavior. However rating systems were suggested to have the following disadvantages: "halo effect, the error of central tendency, generosity of leniency error, the lack of a common referent for scoring calibrations such as 'excellent' or 'seldom', and the difficulty of translating high inference items into 'specific behaviors' ". Withall and Lewis (1963) state the following skeptical view of rating scales:

> "It appears that ratings encourage inferences and extrapolations beyond the observed behavior, in that large, global, undifferentiated segments of behavior are rated in terms of private, unstated criteria of the rater" (p. 690).

Coller (1972) also suggests a scheme for categorizing observation methods. Coller's summary table is presented below in Figure II.3. Coller relates the type of data system with the type of sampling unit. The fundamental data systems are described as field, sign and category systems. The field data systems are similar to Gordon and Jester's (1973) open system "specimen description" category. The sign data systems are similar to the Gordon and Jester closed system "time-signs" category, where behavior is coded according to an a priori list of specific behaviors, and the observer is to look for only specific behaviors. The category data system is, again, similar to Gordon and Jester's defined "time/categories" method, where the observation is limited to "one general aspect of classroom behavior". "The category system is supposed to be exhaustive of behaviors of the type to be observed." (Coller, 1972, p. 12). The sign system is further divided into discrete and hierarchical rating, and interval rating is added to the category system. Discrete signifies a non-equal appearing interval type of scale, hierarchical signifies a clear representation of hierarchy or taxonomy, and the interval rating type of scale signifies an approach to equal-appearing intervals, "a distinct continuum".

Figure 11.3

Methods for Implementing Data Accretion Devices

From: Coller (1972)

Sampling Units / Data Systems	Time/Events	Events	Situational/Events
Field Systems	Commentary	Anecdotal Records (critical incidents) Diary Description (topical) Commentary	Specimen Description Diary Description (comprehensive) Field Unit Analysis Participant Observation Narrative Summaries
Sign/Discrete Systems	Time Sampling	Behavioral Checklists Anecdotal Records (formatted)	Behavioral Checklists Event Sampling
Sign/Hierarchical Systems	Time/Domain Sampling	Point-time Sampling	X
Category/Discrete Systems	Point-fixed time Sampling Time Sampling	Point-time Sampling	Event Sampling Point-time Sampling
Category/Hierarchical Systems	X	Point-time Sampling	Event/Domain Sampling Point-time Sampling
Category/Interval Rating Systems	Point-fixed time Sampling Intrasession Ratings	Point-time Sampling Intersession Ratings	Intersession Ratings Postsession Ratings (Trait ratings)

The sampling unit dimension defined by Coller (1972) is very important for it defines how the event is sampled in the observations: events within specific time limits, simply occurrence of events, or events within a specific situation. Coller states that whatever the sampling plan used, the event is the basic unit, and that time or situational restrictions can be added to help define the parameters of the event. The study by Robbins (1973) gives a more complete analysis of sampling unit dimensions: (1) focus on each child for a set time, (2) focus on change in speaker, (3) focus on change of topic or content, (4) focus on time sampling, (5) focus on category change (no concept of elapsed time, even though preserving changes in behavior), and (6) focus on time unit - it is "necessary to have short time units if accurate account is to be developed for a fast moving lesson". Robbins chose to focus on the whole class related to the behavior of the teacher and decided to record in terms of categories at changes in behavior (category change). Robbins' study, however, did not include an "interact" as the sampling unit dimension; and this was the unit decided upon here for the category system of observation.

Lytton (1971) defines behavior observation methods as: (1) Rating after observation - ratings on global characteristics (summary variables). This method involves the greatest amount of abstraction (inference). (2) Narrative style summaries - observations are summarized after observing. (3) Precoded behavior categories - predetermined interests based on theory or previous research, which define only certain aspects of behavior must be clearly and operation-

ally defined. (4) Selective narrative record - a partial narrative of certain selected aspects of interaction. (5) Specimen record - an attempt to provide a complete record of the observed behavior, and therefore provide the greatest amount of information. Lytton's (1971) description of observing methods is very similar to the Gordon and Jester (1973) and Coller (1972) systems. Lytton, also similarly, concludes that precoded behavior categories, and maybe even selective narrative records, appear to be the most useful and productive. Robbins (1973) suggests that the use of VTR is a good method of obtaining data on individual children or small group activity, if the quality of the sound recordings is maintained.

Summary

The following list summarizes the information on methods of interaction analysis presented in the above section:

1) The best strategy may be to use a variety of instruments to observe teaching-learning behavior, because all individual methods distort actual events. It was suggested by Rosenshine and Furst that a good combination would be using high inference (rating scales) and low inference (category systems) items.
2) It was suggested that broad items and rating scales be used to define process variables to be correlated with outcome measures, and more focused items (like a category system) be used to identify the specific compon-

ents of the broad items that have been found to be significantly correlated with outcome measures.

3) A composite scale of process items was suggested as having merit if these process items are to be related to the outcome items.

4) If summary variables are to be used, then operational definitions of these variables are necessary.

5) After a discussion of possible uses of interaction analyses, the two uses of this study were identified as: describing classroom interactions and determining the relationships between these interactions and outcome measures. Therefore, the emphasis in this study will be to develop a quantitative observation technique and to relate the findings using this technique to measures of child growth in the affective domain.

6) It was suggested that what was to be observed in the classrooms was to be applied to similar relationships between educators and preschool children.

7) Presage variables were defined by a number of sources and are defined in this study as child and educator background characteristics which form the perspectives through which stimuli are received (that is, how the actions or speech of the other are perceived).

8) A number of schemes for organizing the different types of observation techniques used in interaction analyses were identified as: Gordon and Jester, Rosenshine and Furst, Coller, and Lytton. It was felt that the Gordon and Jester scheme was on the overall most complete, and therefore was used as the basis for describing the area. Specimen description, time/signs, time/categories, event sampling and trait-rating were the specific methods isolated. The pros and cons of using each method were also listed, from various sources.

9) A category scheme was chosen as desirable for the low-inference item component of a combined method, because this scheme is more likely to portray reality than the sign scheme. The negative aspects of this scheme will be off-set by a high-inference observation scheme.

10) The following guidelines were outlined for setting up a category scheme or system of observation:

    a) a relatively small number of categories

    b) the categories should identify a relatively common behavior

    c) the tallies should be based on naturally occurring units of behavior rather than imposed time segments.

These guidelines will be incorporated in setting up the observation scheme for this study.

11) The positive aspects of a rating system, as the high inference item component of a combined method of observation, were defined as:

a) greater flexibility

b) less expensive

c) entire situation is viewed before a decision for coding is made.

A number of negative aspects of a rating system were also defined, which should be off-set by the category system.

12) A number of sources were used to define the sampling unit dimension system. The "interact" or "double interact" was chosen as the unit to be used in this study.

13) The utility of VTR tapings to obtain data on individual child-teacher interactions, with high quality sound recordings was emphasized, and will be used in the present study.

II.5 Indicators of Meaningful Learning Processes

A number of studies that deal with categorizing the interaction between adult (teacher) and child are presented below. These are only a sample of what has been done in the field, but illustrate the types of studies that have been done. Most of these studies' categories and methods could not be used in observing preschool children interacting in a dyadic relationship, in an unstructured situation;

however, these studies are presented to help define categories that could be used under these circumstances. The studies will be organized into three groups: (1) those that deal with adult initiation and responses only, (2) those studies that attempt to deal with both child and adult responses and initiations, and (3) those studies that focus on the child.

III.5.1 Observation Studies Dealing With Adult Response and Initiation

Four studies that deal with adult (teacher) response and initiation are presented below.

Withall (1949) developed a Social-Emotional Climate index, and used teacher behavior as a measure of this climate. Seven categories lying on a continuum from "learner-centeredness" to "teacher-centeredness" were defined as learner-supportive, acceptant and clarifying, problem-structuring statements, ("learner-centeredness"), and neutral, directive, reproving or teacher self-supporting remarks and statements ("teacher-centeredness"). The climate was defined by whether most of the teacher's statements fell into the learner or teacher-centeredness categories.

Fagot (1973) states that children "learn more in an environment that is free from criticism and open to student inquiry" (p.198). The variables measured were praise, task-rate, criticism, directiveness, physical affection and response to questions. Three studies were reported in the Fagot (1973) paper. Study 1 listed four teacher be-

haviors as consequences of child behavior: (a) teacher initiates activity, (b) teacher joins activity, (c) teacher comments favorably on child's activity, and (d) teacher criticizes activity. The findings for Study 1 were that "high-task" teachers, praised their children more, criticized them less, and directed their behaviors less. Study 2 rated the child as either task-involved (which did not include interaction with teacher) or not task-involved. The intent of the observation of teacher's behavior was to cover all possible behaviors, using the following behavior descriptions:

"1) Teacher not interacting with child
2) Teacher ignores child
3) Teacher watches child or children
4) Teacher directs or redirects child or children
5) Teacher comments favorably
6) Teacher criticizes
7) Teacher responds to child's question or statement
8) Teacher asks question
9) Teacher gives information
10) Teacher gives verbal comfort
11) Teacher gives physical affection or comfort
12) Teacher initiates activity
13) Teacher joins activity
14) Teacher sets up activity on child's request" (p. 201).

Fagot's list of behavior descriptions is based on a number of major dimensions, i.e. teacher response and initiation, or non-interaction, and a number of sub-descriptions under each major heading. The findings for Study 2 were that less directive and critical teachers had classes of children with a higher rate of task behavior. Study 3 was a replication of Study 2.

A breakdown of positive and negative nonverbal teacher communications is presented by Love and Roderick (1971). The following nonverbal communication categories were defined: (1) accepts student behavior, (2) praises student behavior, (3) displays student ideas, (4) shows interest in student behavior, (5) moves to facilitate student-to-student interaction, (6) gives directions to students; (7) shows authority toward students, (8) focuses students' attention on important points, (9) demonstrates and/or illustrates, and (10) ignores student behavior. Love and Roderick found that teacher non-verbal communication may vary with the type of lesson.

In a study by Katz (1968) two major dimensions of teacher behavior are cited that seem applicable to what is to be studied in this thesis, contact and nurturance behaviors. The contact dimension was defined by type of contact (individual or group), who initiated the contact (teacher or child), and whether the contact was verbal or nonverbal. The nurturance dimension included personal approval, affection, reassurance and support. The point-time sampling technique (under the time/signs approach) was used here, that is, the "observer looks at the behavior of the target person only long enough to be sure what the behavior is, and then checks off the behavior in the appropriate cell".

II.5.2 Observation Studies Dealing With Adult and Child Response and Initiation

The following six observation studies deal with both adult and child responses; however, Zahorik (1968) and Cherry (1975) do not include child initiation and Soar (1970) does not include child responses.

A recent study by Cherry (1975) was carried out to examine sex differences in preschool teacher-child verbal interaction dyads. The emphasis in the Cherry study was on the teacher in her interaction with children. The verbal interactions were recorded, transcribed, and coded into categories of dyadic verbal interaction. The measures of dyadic verbal interaction were: verbal initiation, verbal interaction (utterances in sequence), turn, and question-answer-acknowledgement sequence. The measures of the teachers' speech were: word, utterance, attentional-marked utterance, directive utterance, and repetition. Cherry (1975) found that teachers verbally interacted more, verbally initiated more, and used more attentional-marked utterances in speech with boys versus girls; and also found that teachers used more verbal acknowledgements with girls versus boys.

Soar (1970) isolated a teacher-directed activity versus pupil-directed activity factor, in an attempt to identify teacher behavior. Some of the variables isolated suggest pupil centered activity, i.e. "teacher organizes learning around pupil's own problem or question", "teacher has pupil work independently on what concerns

pupil" and "teacher approaches subject matter in indirect, informal way". In this study drill (the opposite of pupil initiation) was found to correlate negatively with pupil gain scores on cognitive measures, which is a clear attempt to link classroom process variables to pupil outcome measures. It can still be seen that Soar's emphasis is on adult (teacher) initiation and response.

Part of what is being isolated in the present study may be called teacher indirectness, which has been studied by Flanders (1970). An indirect/direct ratio is calculable; this is a ratio of the behaviors "praise" and "use of student ideas" to behaviors "giving directions" and "criticism". It is clear that this indirectness ratio has also identified the nurturance or warmth factor in teacher-child relationships. The "use of student ideas" category of teacher behavior has also been found to be positively related to child achievement. Flanders defined pupil initiation as "expressing own ideas, initiating a new topic (divergence), ... asking thoughtful questions, going beyond the existing structure" (p.34). It can be seen from the child initiation and response categories that Flanders paid little attention to child behavior and focused on the teacher's behavior.

Good and Brophy (1971) suggest that since most of the teacher behavior is directed toward individual students (a theoretical consideration) and teacher effectiveness is multi-dimensional (an empirical consideration), classroom interaction should be coded for the individual child-teacher interaction. I am also suggesting that the type of teacher response categories that the present study is in-

terested in are usually directed to individual students, rather than a total class, i.e. praise, criticism, acceptance of feelings, and use of student ideas. Dyadic interactions were coded by Good and Brophy using the following categories: (1) Response opportunities - recitations, reading turns, answers to open or direct questions. (2) Teacher-afforded communications - individual feedback regarding seat work, asking the child to perform procedural or care taking functions, disciplinary action or evaluative comment about the child's behavior. (3) Contacts initiated by the child - calling out answers, showing work to the teacher or asking questions about it, seeking permission or other contact for procedural matters. Each interaction was also coded separately as to teacher or child initiation. This interaction system is more applicable to more structured school settings than a pre-school program.

In an earlier paper, Good and Brophy (1970) defined more comprehensively the same behaviors:

1) Response opportunities - chances that children get to make overt oral responses.
   a) direct questions - teacher addresses question to particular child.
   b) open questions - teacher waits for raise of hands and then calls on one to respond.
   c) call-outs - pupil calls out answer before teacher recognition.
   d) chorus questions - unison response.
   e) discipline questions - inattentive child requested to respond.
   f) reading turns.
   g) recitation opportunities.

2) Level of question - response demands made upon child.
   a) process questions - requires understanding of academic knowledge or skills.

b) product questions - short answer factual knowledge questions.
c) choice questions - response alternatives presented to child.
d) self-reference questions - questions dealing with personal opinions, experiences or needs.

3) Quality of the child's responses.
a) correct response.
b) incomplete or partially correct response.
c) incorrect response.
d) no response.

4) Teacher's feedback reactions.
a) praise.
b) criticism.
c) product feedback - teacher gives right answer.
d) process feedback - review of processes gone through to arrive at correct answer.
e) repetition of question.
f) rephrasing question or giving a clue.
g) asking a new question.
h) failure to provide feedback reaction.

5) Work related contacts - separately recorded as to child or teacher initiated. Categories included are: praise, criticism, process feedback, and product feedback.

6) Behavior evaluations - when a particular child is praised or criticized for a classroom behavior.

7) Procedural contacts - all teacher-child contacts that do not fit into above categories.

The above system was developed to provide a record of the quality and frequency of child-teacher interaction, and again seems to be most applicable to structured classroom situations. The Good and Brophy (1970) system however, seems to largely ignore the child initiation categories of interaction, including only "work-related" initiations, and does not deal with quality of initiations.

Zahorik (1968) has developed a very extensive teacher-verbal feedback category system to be used during interactive situations in classrooms. The teachers observed using Zahorik's category system were teaching in the third and sixth grades. One hundred and seventy-five different types of feedback were isolated in the research, but only sixteen types were found to be used regularly, although twenty-five categories were defined in the teacher feedback instrument. The categories described direct (main purpose of offering information re the pupil's behavior) and indirect (primary purpose other than providing feedback, but from which inferences as to pupil behavior can be drawn) responses of teachers. Every teacher remark that followed a pupil remark was coded by a category number. These categories were:

1.0 Praise-confirmation
- 1.1 Simple praise-confirmation
- 1.2 Elaborate praise
- 1.3 Elaborate confirmation

2.0 Reproof-denial
- 2.1 Simple reproof-denial
- 2.2 Elaborate reproof
- 2.3 Elaborate denial

3.0 Praise-confirmation and reproof-denial

4.0 Positive answer

5.0 Negative answer
- 5.1 Negative answer repetition
- 5.2 Statement of correct answer

6.0 Positive answer and negative answer

7.0 Positive explanation

8.0 Negative explanation

9.0 Response extension: development
- 9.1 Response development solution without clues
- 9.2 Response development solution with clues
- 9.3 Response development statement

10.0 Response extension: improvement
- 10.1 Response improvement solution without clues
- 10.2 Response improvement solution with clues
- 10.3 Response improvement statement

11.0 Solution repetition: several answers
- 11.1 Several answers solution without clues
- 11.2 Several answers solution with clues

12.0 Solution repetition: one answer
- 12.1 One-answer solution without clues
- 12.2 One-answer solution with clues

13.0 Lesson progression: different topic

14.0 Miscellaneous feedback

Teacher initiations (solutions) were classified according to the Gallager-Aschner (1963) system: (1) cognitive-memory (2) convergent (3) evaluation (4) divergent. Pupil responses were classified by teachers in terms of correctness or acceptability. Zahorik (1968) concluded that teacher-verbal feedback is very complex behavior, and is dependent on a number of different factors including the value of the pupil response. The many types of feedback were different for the third and sixth grade teachers. As pointed out, Zahorik's system did not include child initiation categories and included only a very general child response category; this is explained by the major intent of the category scheme - to define and describe teacher responses.

Moustakas, Siegel and Schalock (1956) set up a procedure for describing and recording all adult-child verbal interaction. The categories defined were not set up according to adult or child initiation or response. A very complex method of scoring, and 95 different categories of response and initiation were defined for both adult and child. A number of initiation categories were defined, for both child and adult, which add to our understanding of initiation: seeking information (personal or impersonal), seeking help (by requesting assistance or completion of task), seeking reassurance, seeking recognition, seeking praise, seeking affection, seeking reward and seeking permission. A time/category system was used where the first action of child or adult to appear per five second intervals was recorded.

II.5.3 Observation Study Focusing on Child Initiation and Response

The following study deals with categories used for observing child initiations and responses in interactions with adults.

A study by Gallagher and Aschner (1963) used Guilford's Structure of Intellect (1956), as a basis for classroom interaction analysis, in a research project on productive thinking. Five primary observation categories were developed: (1) cognitive-memory operations - "simple reproduction of facts, formulae, or other items of remembered content through use of such processes as recognition, role memory and selective recall" (p. 186). (2) Convergent thinking - "the analysis and integration of given or remembered data. It

leads to one expected end result or answer because of the tightly structured framework through which the individual must respond" (p. 187). (3) Divergent thinking - "intellectual operations wherein the individual is free to generate independently his own data within a data-poor situation, or to take a new direction or perspective on a given topic" (p. 187). (4) Evaluative thinking - "deals with matters of judgment, value and choice, and is characterized by its judgemental quality" (p. 188). (5) Routine - miscellaneous classroom activities. One of Gallagher and Aschner's findings was that a slight increase in the number of teacher divergent questions resulted in a large increase in divergent student activity. It is assumed by Gallagher and Aschner that teacher questions preceeded the child response.

A summary of the child-educator (adult) interaction categories discussed above is presented below in Table 11.1. The first four studies dealt solely with adult initiation and response. The Cherry, Soar, and Flanders studies made very vague and general attempts to include child initiation as a category. The Good and Brophy, and Zahorik studies were very heavy on teacher response, but also categorized child response. The Moustakas, Siegel and Schalock study had exactly the same categories set up for both adults and children. The Gallagher and Aschner study largely ignored the effect of adults, and focused on child response. The findings summarized in Table 11.1 will be used to define the observation technique categories used in this thesis to describe the educator- child interactions (Section 111.2.3).

TABLE II.1
STUDIES DEFINING CHILD AND ADULT (TEACHER) INITIATION AND RESPONSE

Categories	Withall (1949)	Fagot (1973)	Love and Roderick (1971)	Katz (1968)	Cherry (1975)	Soar (1970)	Flanders (1970)	
1) Child initiation						Drill initiation	Initiation	Work contac
2) Child Response					(question)-answer-acknowledgment sequence utterance word		Response	Quali pons Call-o Choru Readi Recit Diff.
3) Adult initiation	Problem structuring Neutral Directive Reproving or deprecating remarks	Directiveness Criticism Physical affection Asks questions	Directs Shows authority Demonstrates or illustrates	Contact -verbal -nonverbal	Word Utterance Attentional-marked utterance Directive utterance Repetition	Approaches subject in indirect informal way	Lecturing Giving directions Criticizing or justifying authority Asks questions	Direct ques Open Discip ques
4) Adult Response	Learner supportive Acceptance & clarifying Reproving remarks Teacher self-supporting	Praise Verbal comfort Physical affection Ignoring child Gives information Criticism	Acceptance Praise Use of ideas Shows interest Moves to facilitate Ignoring child	Nurturance Personal approval Affection Reassurance Support	Acknowledgement	Organizes learning around pupil problem or question Has pupil work independently	Accepts feelings Praises or encourages Accepts or uses ideas of pupils	Criti Gives answ Revie proc Repet ques Rephr ques Ask n No fo Praise

Katz (1968)	Cherry (1975)	Soar (1970)	Flanders (1970)	Good & Brophy (1970)	Zahorik (1968)	Moustakas, Sigel & Schalock (1956)	Gallagher & Aschner (1963)
		Drill initiation	Initiation	Work related contacts		Seeking information, help, reassurance, recognition, praise, affection, reward permission, offering, information, directing and restricting	
	(question)-answer-acknowledgment sequence utterance word		Response	Quality of response Call-outs Chorus answer Reading terms Recitation Diff. answers	Degree of correctness or acceptability	Non-attention, Recognition, Statement of condition or action, giving help, Reassurance, Criticism, etc.	Cognitive memory operations Convergent thinking Divergent thinking Evaluative th. Routine
Contact -verbal -nonverbal	Word Utterance Attentional-marked utterance Directive utterance Repetition	Approaches subject in indirect informal way	Lecturing Giving directions Criticizing or Justifying authority Asks questions	Direct questions Open questions Discipline questions	Cognitive memory Convergent Evaluative Divergent	Seeking information, help, reassurance, recognition, praise, affection, reward, permission, offering information	Accompanying teacher questions
Nurturance Personal approval Affection Reassurance Support	Acknowledgement	Organizes learning around pupil problem or question Has pupil work independently	Accepts feelings Praises or encourages Accepts or uses ideas of pupils	Criticism Gives correct answer Review of process Repetition of question Rephrasing question. Ask new quest. No feedback. Praise.	Praise-confirmation Reproof-denial Positive, negative answer, explanation, extension: development & improvement. Solicitation repetition: one and several answers. Lesson progress. Misc. feedback.	Non-attention, Recognition, Statement of ..., Giving help, Reassurance, Directing, Restriction, Criticism, etc.	

II.6 Reliability and Validity of Observational Techniques

One of the major concerns in developing any observation technique is that it be a reliable (stable) and valid (representative of reality) instrument, and this concern is very important in this thesis. The methodological concerns of developing a reliable and valid observation technique have been discussed in a number of frameworks. These frameworks will be discussed from the viewpoints of a number of sources, and a summary statement as to how reliability and validity will be assessed in this thesis will also be presented. For example: Rosenshine and Furst (1973) define three types of reliability - (1) Observer agreement - whether each event was coded in the same way by a number of observers. (2) Inter-investigation agreement - relevant for different studies using the same observational system. Here the major concern is whether the same understandings and rules were used in the coding. (3) Representativeness (or usually called validity). Rosenshine and Furst describe representativeness as whether "the sample of observed classroom transactions is a trustworthy representative sample of total behavior" (p. 169). The influence of observers in the setting is one of the major factors upsetting representativeness of classroom observation. Zegiob, Arnold and Forehund (1975) have found that mothers played more with their children and were more positive in their verbal behavior when they knew they were being observed versus when they did not know. The Patterson and Reid (1970) study had similar findings; that is when the father knew he was being observed he was more positive than

when he didn't think he was being observed. Lytton (1971) suggests that the amount of distortion due to an observer or VTR (recording) equipment in an observation setting, is not any higher than the amount of distortion present in interview data. The problem is the same in both settings; that is, the "social-desirability set". However, a gradual acquaintance with observers or equipment will probably lessen the awareness of those being observed, and those being observed will probably revert to their ordinary behavior, if viewed over an extended amount of time. It has also been suggested that if a large sample of behavior is viewed, than the likelihood of consistently maintaining a false interaction is lessened. Rosenshine and Furst (1973) are most concerned with predictive validity of observational studies, even more than reliability of observations across observers.

Medley and Mitzel (1963) look at the reliability problems in a different way, that is, by defining a stability and a reliability coefficient. The stability coefficient is defined as the correlation between observation scores of the same observer at different times, and the reliability coefficient is defined as the correlation between observation scores of different observers at different times. Unreliability is seen as commonly occurring in two ways: when the measures of the same class differ too much (possibly because of unstable behaviors), or when the differences are too small between different classes to yield a reliable measure. Validity was defined as a measure of the extent to which scores reflect actual differences

in behavior. Validity depends on three conditions: (1) an observation of a representative sample of behavior to be measured, (2) an accurate record of the observed behaviors must be obtained, and (3) an accurate scoring, reflecting differences in behavior. Medley and Mitzel also suggested that it would be better to increase the number of observations than to increase the number of observers, if an attempt was being made to increase reliability.

One of the best articles that deals with reliability of observational techniques is by Weick (1968). Here it is suggested that the reliability of a measure will be higher if few categories are used, precise definitions of the categories are available, and the categories have low inference. Four sources of error were defined, which identified the different types of reliability measures needed: (1) inadequate sampling of content when different observers sample different elements of behavior, (2) chance response tendencies may result from inadequately defined categories or an inadequate understanding of the categories by the observer (inadequately trained observers), (3) subtle changes in the environment between observation periods may cause error, (4) changes in the persons being observed also cause observational error. Weick (1968) defines four comparisons to be made in order to assess the reliability of an observational technique: (1) Correlation of scores of two observers observing the same event; which would rule out errors of change in person and environment. Robbins (1973) described this type of reliability as objectivity, "the degree of uniformity with which various indivi-

duals score the same test (inter-judge agreement). For example: reliability in the Anderson, et al studies (1945, 1946) was determined by "computing the percentages of agreement between the simultaneous, independent observations of two categorizers". Moustakas, et al (1956) defined reliability as the number of agreements divided by the number of agreements plus the number of disagreements. The acceptable level of reliability was set at 80% agreement. (2) Correlation of scores of the same observer watching a similar event at two different times; which would rule out content sampling errors. Robbins (1973) calls this type of reliability, intra-judge agreement. (3) Correlation of scores of two observers observing at two different times; this measure is susceptible to all the defined sources of error, and would probably be the lowest reliability measure. (4) Correlation of scores of one observer on a content basis; which would check for internal consistency, the observer's agreement with himself. Weick (1968) also defines the relationship between reliability and validity, by stating that having a low reliability restricts the validity of the measure, but having a valid measure does not necessarily mean that the measure will also be reliable.

A number of biases of observation techniques are also specified by Weick (1968). Some of these biases are: (1) Abbreviation in reconstruction of behavior, and possibly a loss of some of the material. (2) Middle-message loss, a focus on the initial and final portions of a message and an ignoring of the middle. (3) Cloure (directional distortion) and symmetry (balanced distortion), suggests that unique or irregular events will be coded within the more

common place categories. (4) Enhancement of contrast; this occurs when an observer is more likely to exaggerate some differences and lose others. (5) Tendency toward assimilation to prior inputs; that is, the behavior being observed is more likely to be explained in identity with previous inputs. This bias (#5 above) is related to using "prior coding assignments as the present task becomes difficult or boring". Some suggestions to reduce these biases were to have observers focus on a smaller portion of the problem at one time (to lessen memory bias), to have sufficient rest periods and variation in assignments (to lessen the boredom or satiation problems), and to insure precise categories and definitions by having simple categories and well-trained observers; in other words, to make the coding task possible for the coder. In relation to this, Rosenshine (1970) cautions that simple observational instruments may obscure important behaviors, and also too complex systems may become unmanageable.

A recent study by Wildman, Erickson and Kent (1975) found that overtly assessed reliabilities were higher than covertly assessed reliabilities. This suggests that if possible the reliability should be covertly assessed; and if this is not possible, that reliability should be continually assessed as to its stability. Wildman, Erickson and Kent (1975) also suggested that in order to attain a desirable reliability level and a more stable recording of behavior, observers should be trained by a consistent standard.

Lytton (1971) suggests that the usual procedure for determining reliability of an observational technique, is to compute reli-

ability coefficients on part of the data, and if this proves satisfactory, to then continue the observations with one coder or observer. Lytton also discusses the relationship of the number of behavioral events sampled and reliability; and recommends that the number of behavioral events sampled be as large as possible to increase the level of reliability. Lytton (1971) defines validity as the "degree to which the data are representative of normal" interactions; however, the criterion of normal interactions is not accessible to an objective outside observer. Construct validity (the degree of consistency of data with theory) is also a problem because, as suggested by Lytton (1971), the theory in child-socialization (and also meaningful learning situations for children) "rests on very shaky foundations". Robbins (1973) assessed the content validity of his observational technique by having a panel of relevant judges review it.

Eight characteristics of a good classification system have been defined by Glassford (1970) as: exclusiveness, exhaustiveness, differentiation, ascertainability (easily identifiable), unambiguity (meaningful terminology), relevance (theoretical), exactness, and usefulness. Some of these characteristics have been identified by other authors, but Glassford (1970) does seem to clearly and succinctly define what properties a good classification or categorization scheme should have.

Summary

The following major types of reliability were isolated; and these types are listed in order of importance to this thesis:

1) intra-judge agreement (stability coefficient), which usually depends on how well trained the observer is or how clearly the observation categories have been defined,
   a) same observer, same events - checking for internal consistency;
   b) same observer, similar events - to rule out content sampling errors.
2) inter-judge or observer agreement, (objectivity) - different observers, the same event.

The following suggestions have been offered, by numerous authors, to increase the reliability of an observational technique:

1) few, or an easily manageable, number of categories;
2) precise definitions of categories;
3) well-trained coders who have a solid understanding of categories;
4) low inference categories; and having exclusive, exhaustive relevant and useful properties;
5) when coding, focus on a small portion of problem, have sufficient rest periods, and have variation in assignments.

Validity of an observational technique has been defined as representativeness of reality, or whether the observed sample is repre-

sentative of what normally happens. The major factors influencing validity were defined as:

1) influence of observers, which can be lessened by gradual exposure and extended presence;
2) insufficient sample of behavior, which can be alleviated by obtaining a reasonably large and random sample of behavior to be observed;
3) inaccurate recording and scoring of behavior, which can be alleviated by well-trained observers (or VTR technician) and coders.

The following points are also available to assist in assessing the reliability and validity of an observational technique:

1) Compute reliabilities on part of the data, and if this proves satisfactory, proceed with the observations or coding with one coder;
2) Content validity can be assessed by having a panel of judges review the observational technique;
3) Covert reliability assessment should be used continually through the coding or observation, and use overt assessment only if covert assessment is not possible.

II.7 Self-Concept, An Immediate Outcome - Indicator of Affective (Social-Emotional) Development

The basic difficulty in attempting to define and measure affective development is the nature of child development in general.

Piaget (1961) suggests that the relationships between cognitive and affective development are complementary, inter-dependently functioning, and parallel; and that there is no evidence of causality between these two types of development. Piaget (1961) also states that affectivity may lead to acceleration or retardation of cognitive growth, but that there is not a pure cognitive or affective state. In accordance with this, Tari (1968) and Pellegreno (1970) have suggested that an improvement in the affective domain raises the motivational level of children (particularly disadvantaged), which provides the needed impetus to develop in the cognitive field. However, Pellegreno (1970) also states that development in one domain does not always enhance development in the other domain. The example given is, a reading course offered to develop cognitive skills, which also produces a negative effect in the affective domain; in order for the children to take the course, they must miss out on part of their lunch or spare time.

Schachtel (1959) has stated that "there is no action without affect", and that the assumption that affect and action are mutually exclusive is false. Also, Vygotsky (1962) describes the relationship between intellect (cognition) and affect as:

> "... their separation as subjects is a major weakness of traditional psychology since it makes the thought process appear as an autonomous flow of thoughts thinking themselves, segregated from the fullness of life, from the personal needs and interests, the inclinations and impulses, of the thinker."

In Caldwell's (1967) description of an "optimal learning environment" for young children, it is suggested that cognitive de-

velopment and socio-emotional (affective) development tend to be positively correlated, but Caldwell does not state any hypothesized causal relationships. However, considering the Watzlawick (1967) position on relationships, it seems that there could be a "causal" relationship between affective and cognitive development; that is, a circular, reciprocal, or feedback relationship rather than a linear relationship. The developmental emphasis for this study will be in the affective domain, acknowledging also the presence of many cognitive processes and factors.

In an attempt to operationalize affective development, it is assumed that affect and cognition are interrelated aspects of a total personality, and that a measure of the child's perception of himself is an indicator of the affective domain. Gewirtz (1968) in defining "affects" and "feelings" has defined the relationship between a child's self-concept (as an indicator of affect), and his interactions with others. The definition presented by Gewirtz is, "affects imply responses by one of the interactors which provide stimuli that are discriminated by the other interactor and that control his behaviors". The teachers' expectations, relayed in her interaction with a child, influence the child's perceptions about himself and thus his self-concept, (Black, 1974; Yarrow and Waxler, 1971; and Spaulding, 1965).

Black (1974) suggested that learning disabilities and problems in self-concept are associated in a circular fashion. Mattocks and Jew (1974) defined specific ways in which a teacher can assist in the early development of a healthy self-concept. Ostrom (1973) has

suggested that in an environment where a child has "freedom of choice, freedom of movement, and freedom to make moral judgement", he will more likely develop a healthy self-concept than in a restricted environment. Also, Wylie (1961) has stated that self-concept is developed and modified through a learning process.

Self-concept has traditionally been defined as the individual's evaluation of himself, learned through perceptions of the evaluative reactions of others, or social evaluation. James (1890) stated that man "has as many different social selves as there are distinct groups of persons about whose opinion he cares", and described a "social me" - as that part that perceives recognition from others, and that which is regarded as an object of what is known. Cooley (1902) discussed a social self which was seen in relation to other persons, and designated this by the common terms of speech of the first person singular pronouns. The "self" was defined by Mead (1956) as "something which ... arises in the process of social experience and activity", ... and as a result of the individual's relations to the process as a whole and the people within it. Mead deals with the process whereby an individual's awareness of his attributes becomes his self-concept, and defined this process as one where the individual becomes "an object to himself". Coopersmith (1967) also describes self-esteem in an evaluative mode: "a personal judgement of worthiness that is expressed in the attitudes the individual holds toward himself".

A departure from the evaluative aspect of self-concept, can

be seen in Rogers' (1961) reference to self-concept as one's perceptions of his characteristics and abilities. Rogers' definition has mainly descriptive or explanatory meaning for a perception of self. Bills, Vance and McLean (1951), Kinch (1963), and Jersild (1952) all define the self-concept in descriptive terms. Staines (1958) defines the concept of the self as:

> "a learned structure, growing mainly from comments made by other people and from inferences drawn by children out of their experience in home, school and other social groups".

Staines suggests that teachers are among the most influential people in determining the self-concepts of children, and found in his study that teachers can directly influence a child's self-concept. The classroom interactions were coded as to positive, neutral, negative or ambiguous effect on children by a panel of judges and then classes were rated as to positive and negative scores in a number of areas. The ages of the children observed in this study ranged from seven to over eleven.

Davidson and Lang (1960) stated that a child's self-concept develops out of interpersonal relationships, and can be modified by subsequent experiences. Again, teachers are seen as among the significan people who will affect the child's feelings about himself, his self-concept, and in fact, influence his personality development. One of the findings from the Davidson and Lang research was that: "children's perception of their teachers' feelings toward them correlated positively and significantly with self-perception".

Epstein (1973) defines seven summary characteristics of self-concept, and defines self-concept as a "theory that the individual has constructed about himself as an experiencing, functioning individual".

DiLorenzo (1969) lists fifteen areas in a pre-school classroom by which the development of a self-concept could be described: large (gross) motor ability, welcomes new situations and varied materials, confident and responsive about artistic and musical materials, uses picture books, able to clothe self, free from self-consciousness, invites others to play, helpful with peers, competitive, satisfying relationships with many different children, helpful with teacher, comfortable relationship with teacher, positive feedback from teachers about accomplishments, and curious. DiLorenzo used two methods to measure self-concept: a Learner Self-Concept Test - which is a self report instrument based on symbolically contrived situations, and a teacher observation check-list containing the fifteen defined areas on the teacher's estimate of the child's self-concept.

Dinkmeyer (1965) has suggested that the early display of self-concept is very general, and increases differentiation to more specific perceptions as the child gets older. This suggests that the four to five year old child would have a very general self-concept, which would probably not be different for different content areas. This issue will be dealt with at more length in defining a self-concept instrument (Section III.2.5 below). Dinkmeyer (1965) also

calls for a closer examination of the effect of teachers and classroom atmospheres on the child's self-concept.

Thomas (1967) presents a view of self-concept, which defines a circular relationship between self-concept, behavior, other's perceptions of self, and perception of other's perceptions of self. Not only is it being suggested that other's perception of an individual (through social interaction) affects the individual's self-concept, but that self-concept also affects others' perception through modifying the individual's behavior in social groups.

Coller (1971), in a very comprehensive treatment of the self-concept variable, incorporates Creelman's (1954) definition of self-concept: "a multidimensional construct that covers and includes the total range of one's perceptions and evaluations of himself". DiLorenzo (1969) defines self-concept as a "prime determiner of how the individual not only reacts to, but perceives his environment", and also in turn influences his behavior in future situations. The definition of self-concept of children into five content areas by Mullener and Laird (1971), is helpful in operationalizing self-concept. Mullener and Laird's five content areas for self-concept were: achievement, intellectual skills, interpersonal skills, physical skills, and social responsibility.

Summary

The developmental emphasis for this study is in the affective domain, acknowledging also the presence of many cognitive pro-

cesses and factors. Affect and cognition are assumed to be interrelated aspects of a total personality. One indicator of the affective domain is defined as a measure of the child's perception of himself - his self-concept. The self-concept is determined by the responses and expectations an individual recieves in his interactions with others.

Self-concept has been defined both in terms of an evaluative mode and a descriptive mode. The evaluative self-concept is the individual's evaluation of himself learned through the perceptions of other's actions and reactions. The descriptive self-concept is the individual's perceptions of his characteristics and abilities.

Educators (teachers) are described by a number of sources as having a large amount of influence in determining the self-concepts of children.

A number of definitions of self-concept are offered; especially the Creelman, DiLorenzo, and Thomas definitions suggest that both the descriptive and evaluative segments of self-concept should be analyzed and that the relationship between a child's self-concept and behavior is probably circular and self-reinforcing. DiLorenzo's fifteen areas of preschool classroom development of self-concept, and Mullener and Laird's definition of self-concept of children into five content areas help define the areas which should be included in operationalizing the self-concept of a preschool child.

II.8 Methods Used to Identify the Self-Concept of the Preschool Child

A number of different methods and sources could be utilized in assessing the self-concept of a preschool child and it is important to consider that preschool children are specially characterized (see Section III.2.3). Allport (1955, 1967) has suggested that the foundations of the child's character, personality and concept of self are established by the age of three to five, because only at this age has the child been able to be "free to become". Allport bases this suggestion on Mead's theory of aspects of self-hood, and that a self-image is acquired at around four years of age. Therefore, it is assumed that the preschool child of four years/six months to five years/six months has acquired a concept of self.

Coller (1971) in an extensive review of the assessment of self-concept in preschool aged children, presents a summary way of defining measurement techniques, which is presented below in Figure II.4.

Figure II.4
A General Model for the Assessment of Self

(Source: Coller, 1971, p.21)

The four techniques or combinations, for assessing self-concept that are presented in Figure II.4 above, suggest two main ways of inferring self-concept: by direct observation of behavior or by examining what the behavior indicates ("traces"). The direct observational procedures emphasize overt behavior either in unstructured environments, selected situations, or contrived situations in which the observation is more controlled. The direct observation methods are well suited for younger children who can't be given the other styles of tests because of their lack of experience with language, inability to report about themselves, short-attention spans, and lesser ability to complete a test.

The behavioral trace procedures of identifying self-concept are an examination of the after-effect produced by a child's past responses. Two types of behavioral trace procedures are identified, physical tracings = "examination of changes in physical matter", and retrospective trace reports - used to "examine the memories or impressions that others have of the child". A teacher checklist to recall the behavior of a child would be an example of retrospective trace reports. Two considerations for using the behavioral trace procedures would be that one can not always be sure what is reflected in the trace and "memories are notoriously faulty due to the numerous opportunities for distortion". Therefore if using a teacher report form it would be much better to have the teacher complete her report on current observations rather than on recall.

The self-report procedures are useful if the children are not too young to make meaningful judgements about themselves. Three types of self-report procedures have been identified: manifest and/or cloaked self-reports, reports on symbolically contrived situations, and episodic recall (an everyday technique used by parents and teachers). The self-report procedures are the most widely used self-concept measures. The manifest and/or cloaked self-report instruments can be disguised, or non-disguised in purpose. The symbolically contrived situation instruments use symbols to represent characteristics and/or behavior dispositions.

The projective techniques deal with the non-phenomenal or unconscious measurement of behavior, and requires a relatively highly trained psychometrician to administer the instruments or to score a

child's development on the basis of his play with materials (for example, the Draw-a-man test).

Combs and Snygg (1959) define self-concept measuring procedures similarly to Coller's (1971) presentation. The categories used by Combs and Snygg were: from the individual himself (self-reports), inference from observed behavior (direct observation), projective techniques, and protocols.

Combs and Soper (1963) define self-concept and self-report measures as very different, i.e. self-concept is what a person believes he is, while self-report is what a person says he is. Combs and Soper (1963) therefore state that self-report can not be used as a measure of self-concept. Two problems with observational techniques were pointed out as: being dependent on the skill of the observer, and that the inferred self-concept is more accurate than a self-report. In fact, in their research Combs and Soper found no significant relationship between the self-concept of children assessed by behavior observations, and the self-reports obtained directly from the children. The following factors were listed as determining how closely self-concept (observed) and self-report agree:

> "1) clarity of individual awareness,
> 2) availability of adequate symbols for expression,
> 3) willingness of individuals to co-operate,
> 4) social expectancy,
> 5) individual's feeling of personal adequacy, and
> 6) feelings of freedom from threat."

It is assumed these factors will have minimal effect on relatively spontaneous four and a half to six year old children. The willingness to co-operate, social expectancy and feelings of freedom from threat

factors can be minimized by using very careful testing procedures with well-trained and supporting testers. DiLorenzo (1969) found significant but low correlations between his self-report measure and a direct observational procedure, and the items used with the two procedures were similar in item content.

There is the other viewpoint that only with a combination of subjective and observer evaluations can the major variables of self-concept be measured (Coopersmith, 1959 & 1967). Fiske (1963) has suggested that only with using a number of different sources of information, can the self-concept be measured; however, Fiske also suggested that an individual may be seen differently by different people.

Coller (1971) attempts to deal with this issue by stating that the fifty odd studies he presents on self-concept measurement procedures are not homogeneously defined, and therefore suggests the treatment of self-concept as sub-constructs. Coller (1971) also suggests that using a combination of self-concept measuring procedures does seem "desirable".

Coller (1971) describes the large number of self-concept instruments (presented as examples of the defined procedures) as in developmental form, and giving little concern to reliability and validity. Wylie (1961) also stated this, ten years earlier, in her review of self-concept measures; "sufficient information is not at hand regarding their reliability or their construct validity" (p. 98). These findings suggest that no well developed and tested instrument exists for measuring self-concept of four and a half to six year old children, that one should consider using a combination of measures that suit

specific purposes, and that the validity and reliability of these measures should be carefully discerned and developed.

Coller (1971) stated that it is inappropriate to validate one self-concept measure by comparing it with another self-concept measure, because these measures may be mapping different self-concept constructs. Therefore, this suggests that construct validity should be very carefully assessed, making sure that measures with common constructs are being compared. Convergent validity is described as highly desirable, and is defined as a "high correlation between measures of the supposed same trait (construct)". Campbell and Fiske (1959) describe convergent validity in terms of a multi-trait-multi-method matrix. This suggests that the correlation between two measures of the same self-concept construct should be higher than the correlation between the self-concept construct measure and any other construct measure having neither trait (construct) nor measure in common. The questions of reliability, measuring consistently on a two-time or matched half situation, and validity will be discussed more specifically when the study measuring procedures are defined.

Summary

Four major types of methods to assess a preschool child's self-concept were defined as direct observations, self-reports, projective techniques and behavioral trace reports. It is recommended, by a number of sources, that some combination of these methods be used to measure the child's self-concept. It is also cautioned from a number of sources that there may not necessarily be a significant relation-

ship between the results obtained using different self-concept measures, unless very careful attention is paid to measuring the same sub-constructs of self-concept. The inability of researchers to find a high congruence between self-report results, and direct observation and assessment of self-concept, may in part be explained by the suggestion that self-report is what a person says he is, and self-concept is what he believes he is, which may be different.

The lack of well-developed, tested, valid and reliable self-concept measures for preschool children, strongly suggests that another attempt to develop such a measure, or a number of measures is warranted; and that much attention should be focused on developing the reliability and validity of these measures.

CHAPTER III

METHODOLOGY

In the theoretical orientation section, Section II above, the groundwork has been laid for the research in this thesis. Whenever the literature review was dealing directly with the methodology of this thesis, decisions were made and summarized in each individual section. Many of the issues presented in this methodology chapter (Chapter III) have already been discussed in some detail. This metholology chapter will present a discussion of expectations, a summary of the terms used, the research design, a detailed description of the methods used, and a summary of the proposed analysis.

III.1 Expected Findings

The present thesis is based on the assumptions that valid and reliable indicators of immediately meaningful learning processes can be isolated, and that a change in the self-concept of preschool children (outcome) can also be validly and reliably assessed. This thesis is largely methodological in emphasis, with a major effort devoted to defining, operationalizing and measuring meaningful learning processes for young children. Once this was accomplished, it was felt that the instruments could be tested out on a small number of

children. It was also felt that in looking at these children some information could be gained as to possible relationships between the meaningful learning process and indicators of the process (product) measures. Some relationships are expected using a small number of individual children, however these expectations are not stated as hypotheses because the small number of children do not constitute a sample. Since a sample of children is not used, visual observation of trends rather than statistical tests will be used to assess whether the expectations are realized. Future research could incorporate a sample of children, randomly selected from a population and these hypotheses could be stated and statistically tested. Therefore the following expectations were stated on the basis of the literature review presented in Chapter II:

I. It is expected that meaningful learning processes for a child will more likely take place in interactions with nurturing and supporting educator behavior.

II. It is expected that meaningful learning processes for a child in interaction with an educator will be related to the development of a more positive self-concept for the child.

III.2 Research Design and Methodology

A number of problems have been identified in the present study:

1) What types of interactions in learning processes are going to be the focus of the observation techniques?

2) What are the characteristics of participants in the learning processes?

3) What methods are going to be used to define the meaningful learning process indicators?

4) How is the self-concept of the child going to be measured?

5) How are the learning processes and product going to be interrelated?

Before these problems are dealt with, a section on the definition of terms included in this study is presented below.

III.2.1 Definition of Terms

The following terms have been found throughout the preceding sections, and will be included in the research design. The accompanying definitions have been acquired through the literature review.

Process Variables - on-going interactions between an individual and his environment; the system parameters.

Presage Variables - an individual's characteristics that have developed through prior interaction with his environment, including other people; have also been called input variables.

Outcome or product variables - the results of the interaction.

Learning - results in relatively permanent modifications (changes in) behavior, or the acquisition of responses.

Meaningful learning - learning that gives meaning to the learner's whole being, to the personality and to the development of an understanding of self. Meaningful learning processes in-

volve the child as a total being in his environment, and in his understanding of himself and his world.

Gestalt approach to learning theory - a change in part of a system will influence a change in the total system, a system is defined as an inseparable whole and the characteristic of non-summative parts.

Initiative or curiosity behavior - indicators of a meaningful learning process. The following list of characteristics from the literature review defines curiosity:

1) asking questions and expressing a need for more knowledge concerning understanding self and environment;
2) experiencing objects in search of meaning.

Interaction - reciprocal relationship, where the behavior of one individual stimulates the behavior of the other(s).

Interaction analysis - analysis of reciprocal relationships where the behavior of one individual stimulates the behavior of the other(s).

Interact - an "initiating act and an outcome".

Double interact - "instigation-reaction-subsequent act" sequence or cycle.

Observational technique - methods used to observe teaching-learning behavior and can be organized under following headings: specimen description, time/signs, time(categories), event sampling and trait-rating.

Dyadic relationship - a one-to-one interaction, based on an initiating act and an outcome reaction.

Category Observation System - behaviors are grouped under a label, and each time an event occurs it is recorded. Has relatively low inference items.

Affective development - social-emotional development.

Self-concept - feelings about one's self (in terms of perception and evaluation), and an indicator of affective development. Self-concept includes both evaluative and descriptive components.

Sampling unit dimension - how the event is sampled in the observations; that is, by occurrence within time units, or within situations.

Rating scale - has high inference items. After longer periods of observation an observer makes a judgement of the underlying traits of those observed.

Reliability of observational technique - of two main types:

1) Intra-judge agreement (stability coefficient), which usually depends on how well trained the observer is or how clearly the observation categories have been defined.

   a) same observer, same events - internal consistency,

   b) same observer, similar events - to rule out content sampling errors.

2) inter-judge or observer agreement (objectivity) - different observers, the same event.

Validity of observational technique - representativeness of reality or whether the observed sample is representative of what normally happens.

Preschool aged child - aged four to six, and who is not attending elementary school.

Direct observation method of assessing self-concept - emphasizes overt behavior either in unstructured environments, selected situations or contrived situations.

Manifest/Cloaked self-report method of assessing self-concept - instruments are either non-disguised or disguised in purpose, and the respondent is to make meaningful judgements about himself.

III.2.2 Focus in Looking at Meaningful Learning Processes by Using the Observation Techniques

Convenient and easily accessible interactions between educators and pre-schoolers are available in pre-school settings. Here an indication of the child's self-concept is possible at the beginning, and after a specified time of his interaction with an educator, thus controlling for extensive prior experience with the educator. Two test situations allowed an estimate of the child's self-concept change. The interaction processes of the child and educator in the child's learning situation were mapped during the time between test situations.

III.2.3 Focus in Looking at Characteristics of Participants in Learning Processes - (Including Children and Teacher)

An average American preschool child of around five years old has been characterized by Gesell (1946) as:

1) interested in the here and now, his world is limited;
2) mother is the center of child's world;
3) not over-demanding, and his development flows much more smoothly than the four year old's, or the restlessness of the five and a half to six year old;
4) constantly seeking adult support and guidance, and is eager to obey mother. Wants to please and help;
5) constantly seeking affection and applause;
6) loves to talk and to be read to;
7) emotionally he is relatively well adjusted within himself and confident with others;
8) poised and controlled, well-oriented to himself;
9) loves to ask questions;
10) is not overly fearful (as four year olds) and not overly aware (as six year olds);
11) shows a greater ability to play with others than at four years old. Is less bossy, and actually may be helpful and protective;
12) shows an interest for standard kindergarten materials: paints, pencils, crayons, paste, scissors, etc.;

13) gross motor activity is a favorite.[1]

Mitchell (1973) describes the five year old by a number of characteristics, as different from the four or six year old. Some of the distinguishing characteristics suggested were:

1) more reliable, emotionally stable, adjusted and self-constrained than four year old;
2) motor control and speaking skills are well-matured;
3) only slight awareness that his thoughts are a subjective process, and cannot be read by adults;
4) a crude moralist, looking after others' morals - including talking and reminding people of their errors;
5) punishment and superior power have alot of influence;
6) a limited understanding of physical causality;
7) very lively and happy;
8) well-mannered and tries to please.

Mitchell does not define the five year old child as mother or home-centered. Gesell and Mitchell agree that the five year old's development is a transition stage between four and six years old, and where the development runs more smoothly, and that the five year old is better adjusted with himself and confident with others.

[1] This list of thirteen characteristics is a much abbreviated account of Gesell's twenty-eight page description of five year olds.

The children studied in this thesis are seen as normal preschool aged children with similar characteristics to those defined above.

Based on the literature review presented in the above sections, it is assumed that educators (teachers) relate to and interact with some children very differently from other children. A partial reason for this could be the presage variables that each child and educator bring with them to their interaction. Teachers react very differently to labelled poor achievers, the different sexes, etc. Yarrow and Waxler (1971) have stated that an adult's behavior toward a child is not only affected by the child's immediate responding and behavior, but also by "images and expectations that the adult develops about the child" (p. 311). Good and Brophy (1971) have suggested that children differing in social status, sex or achievement level also differ in the type of interactions they have with their teachers; that is, boys tend to get more disapproving contacts, lower class children tend to get more criticism, and low achieving children tend to receive more conflicting and dominating teacher contacts. Adults seem to act according to a child's reputation, and this in itself illustrates the circular relationship between self-concept and interaction. Yarrow and Waxler (1971) found that the children who went after help more frequently also tended to receive more positive responses from adults. It was also found by Yarrow and Waxler, that boys got more adult attention, and the boys' characteristics had a stronger effect on adult behavior than girls' characteristics; that is, the female adults tended to be "harder" on the boys than on the girls. However, Yarrow and Waxler also

stated that the differential sex effect could be modified by the child's personality variables.

Davidson and Lang (1960) found that teachers were more likely to express approval of girls and greater disapproval of boys. Baumrind and Black (1967) also found differences in how boys and girls were perceived. Smith and Green (1975) found that boys had a greater likelihood of being aggressive than girls; however, they also found limited support for the suggestion that teachers pay more attention to aggressive behavior in boys than in girls. Lewis (1972) explains that parents take care of girls differently than boys, and this is what accounts for the sex differences in developing children's behaviors.

The above findings suggest that one of the variables that should definitely be controlled is the sex of the child. The most expedient way of doing this would be to select only girls or boys for the sample. It is proposed that since some teachers have a visible disapproving or negative attitude toward boys (or are at least more likely to have a more disapproving attitude toward boys), and considering that this may be where differences in self-concept are most visible, only boys will be included in this thesis.

Since it is assumed that educators relate to and interact very differently with different children (Good and Brophy), there should be as much variance in one teacher's interaction with a classroom of children as one would find between teachers for similar children. Therefore in order to control for teacher variance, only one teacher was included in the study analysis.

This thesis is based on a larger study, The Cooperative Early Childhood Education Project (CECEP) Evaluation Study, 1973/74. The larger evaluative study covered two schools in Edmonton, the only two that were involved in CECEP. These schools were originally included in CECEP because they represented the Public School and the Separate School systems, were in similar geographic areas and were willing to enter the project. A pre-school teacher in the Separate school included in CECEP was selected for this thesis on the basis that the Separate school was in a much more homogeneous neighborhood (lower-middle class) than the Public school, and that the pre-school teacher in this school was very positive to the study and was more structured in her approach to the class which resulted in a relatively lower noise level. Since the neighborhood surrounding the Separate school was quite homogeneous, the children included in this thesis were from similar social class backgrounds.

The teacher included in this thesis was anonymously characterized as to type of approach to learning, nature of activities in classroom, amount and method of control used, level of nurturance and supportiveness, orientation of teacher, and familiarity with individual characteristics of children. This characterization was accomplished with the aid of characterizing all of the CECEP grade one and pre-school teachers in similar circumstances, and using three professional researchers to agree to the characteristics described. Therefore the classroom used in this thesis was characterized in relation to other CECEP classrooms. The classroom itself was also characterized, using the categories of organization, furniture, time

and resources. This characterization will enable a comparison with other classroom interactions and will present a base for inference of results.

Based on the literature review presented above and some previous experience in attempting to analyze preschool child-teacher interactions[1], it was decided that dyadic relationships between one teacher and one child would be analyzed. Preschool classes are relatively unstructured and usually have a high teacher-child ratio. This type of situation and the theoretical implications of the present study make it difficult to use an interaction analysis similar to the Flanders method. Fagot (1973) stated that most instruments are more appropriate to structured school settings, and are difficult to administer in a less structured preschool setting. Also Good and Brophy (1971) have stated that because of the very visible intra-class differences in teacher-child interactions, dyadic interacts based on the individual child-teacher interaction should be the unit of analysis. Dyadic interactions were the unit of analysis in a recent study by Cherry (1975). If dyadic relationships are to be used as a basis of identifying indicators of meaningful learning processes, careful attention will have to be paid to selecting and monitoring the development of individual children.

The boys from the selected class were placed on a continuum from least to most positive self-concept, and the six boys with

[1] Lesser Slave Lake Preschool Project Study, Phase I, 1972; Phase II, 1974. See Appendix A for a summary description of these pilot projects.

the least positive self-concepts were included in the study. The identification as to initial self-concept was based on a pre-testing of all the children in the class using the self-concept total scores of the teacher and child self-report instruments identified in Appendices C and D. Six boys were selected because there was a natural break in the pre-test scores at this point, identifying the boys with the lowest pre-test self-concept scores. These boys also consistently attended the pre-school class for the majority of time during which the tapings were made. All these boys had room to move toward more positive self-concepts.

III.2.4 The Method Used to Define Meaningful Learning Processes

The methods used to define the meaningful learning processes will be discussed under the headings of: the selection of dyadic interactions, the interaction categories, coding procedures, and reliability and validity of the interaction analysis.

III.2.4.1 Selection of Dyadic Interactions

In order to acquire a representative sample of the learning processes for each boy selected, the learning interactions of boys and teachers were taped and observed two times between the initial self-concept measure and the final self-concept measure. The sets of interactions between the teacher and child were captured by the use of VTR equipment. The equipment was placed in one position in the room (see Figure IV.1, page119). A number of days of taping were used for practice purposes and also for allowing the classroom to get used to

the equipment, technician, and observer. From these practice tapings the observer-coder was also trained.

During the practice taping a procedure had to be developed by which the VTR technician could systematically get a relatively equal amount of tape on each of the six selected boys. The method used was to develop a schedule for taping, planning to focus on two to three different boy combinations each day and therefore give each boy equal coverage. This procedure was needed for when the teacher moved around, quick decisions had to be made as to whom the VTR camera was to focus on; that is, which boy with the teacher. The VTR camera was not able to move as quickly as the action happened in some situations, and the technician found that more interactions were caught by the camera if two or three boys in interaction with their teacher for one day were focused on rather than all six boys. For example: for day one it was decided to focus on Child 1, 2, and 3 (in that order) if possible; for day two it was decided to focus on Child 4, 5, and 6; on day three it was decided to focus on Child 3, 6, and 1; and so on, until each boy had an equal opportunity at being the primary, secondary or tertiary focus. How interactions were focused on is discussed below on page101 in the section "Coding Procedures".

Approximately seventeen hours of data were collected on the six selected boys interacting with their teacher, approximately seven hours for the first taping and ten hours for the second taping. This time was then edited into what was codeable time; that is, where interactions were possible, both teacher and child were visible, and the tape was of sufficient auditory and visual quality to be used.

The editing was also based on a criterion of time segments not shorter than five minutes. This was decided on the basis that the minimum amount of time for any tape segment would be five minutes, because any shorter time made the analysis too disjointed.

One developmental psychologist was selected to finalize the interaction analysis categories (assisted by me and another assistant), and to code the tapes. The procedure used in finalizing these categories is outlined in the following sections. One week was taken for training, during which time the tapes were previewed, timed (as to codeable segments), and the interaction analysis categories were refined.

III.2.4.2 The Interaction Categories

The purpose of the observational technique is to identify possible meaningful learning processes taking place in teacher-child interactions, and under what circumstances these processes occur.

Based on the recommendation of Rosenshine and Furst (1973), two observation techniques were used to define meaningful learning processes, a category scheme and a rating scheme. The category scheme contained low inference items which define the child-teacher interaction in terms of an interact (action and reaction). The unit of analysis was the action (response or initiation) of one of the participants. However, the varying time segments (from 159.75 to 309.5 minutes) of each observation were recorded so that a quantity measure of the interactions in each interaction category could be assessed as a rate. The rating scheme was based on observations of the interactions, and is composed of two subjective judgements; one of the

amount of teacher supportiveness, and the other of the quality of child initiation. What is quality initiation, is described below and comes out of the theoretical discussion of creative behavior.

The first step in the analysis was to locate a dyadic interaction between child and teacher, by defining an initiator. To determine the type of initiation behavior, circumstances surrounding, and response, the following categories and procedure were initially used: If the child is the initiator, then this initiation was to be categorized as informational convergent or informational divergent statements or questions, as seeking support questions or statements, as miscellaneous or routine questions or statements, or in terms of gestural or non-verbal initiation (both positive and negative). The divergent and convergent categories are based on Guilford's (1956) discussion. It was assumed that the occurrence of child-initiation in itself was an indication that meaningful learning was occurring. However, a specification of the type of initiation was attempted, and the occurrence of divergent questions or statements was defined as the clearest indicator of meaningful learning taking place. Based on Moustakas, Sigel and Schalock (1956), the seeking for support from the teacher seemed to be a necessary addition to the child initiation categories. The seeking for teacher support includes help, reassurance, recognition, praise, affection, reward and permission. A residue or miscellaneous category was also included for initiation which did not fit into the other categories.

If the teacher is the initiator, the initiator was to be categorized according to Flander's categories of "asks question",

"lectures", "gives directions", "criticizes and justifies authority". The sub-categories of memory, convergent or divergent were added to clarify the general category of "asks questions", and were based on Gallagher and Aschner's (1963) discussion. A positive non-verbal communication category, and a negative non-verbal communication category were also added.

If the teacher is the respondent, her behavior was to be categorized mainly in terms of supportiveness or nurturance. Some of the identified categories were based on Flander's categories, i.e. praise or encouragement, accepts or uses ideas of child, and criticism. Correction, verbal comfort, information giving, negative non-verbal (avoidance, etc.), and positive non-verbal communication (affection) were also added from the other studies reviewed. Both the teacher response and initiation categories defined here are congruent with those suggested by Fagot (1973).

If the child is the respondent (in terms of a statement), again the informational convergent and divergent, miscellaneous (routine), seeking support response and non-verbal communication categories were to be used. Another category was added, informative cognitive memory statements, which is based on Gallagher and Aschner's (1963) category system.

Since the major concern is with the amount and type of initiation and the circumstances of the interaction that seem to be fostering initiation, the quality of child initiation and supportiveness of teacher response was ranked on a six point scale from low to high by the observer for each observation period.

The summary variable called quality of child initiation was defined as the perceived amount of creativity and divergence within each child's initiations. A child, for example, may initiate merely to gain attention; this would be rated as low quality. On the other hand, the child may initiate because He really wants to learn; this would be rated as high quality. It was found in the literature review that the display of creativity is a "quality" type of child behavior in interaction with an educator. The summary variable called supportiveness of teacher response, was how comparatively supportive the teacher was in here interactions with each of the six children.

The category scheme set up to map a child's learning process was based on the variables identified above and is presented below in Table III.1

When the observer-coder was training, it was discovered that the categories were not completely satisfactory, even after definitions were developed. Therefore some new categories were added and some others were redefined. The major change in the interaction analysis categories was the elimination of the memory, convergent and divergent categories, and the inclusion of the restrictive and interpretive or creative categories. It was found that Gallagher and Aschner's (1963) categories (based on Guilford, 1956) did not apply to four and a half to six year old children, because of the difficulty of distinguishing between what was memory and what was analysing behavior (convergent thinking) for these less mature students. Also,

Table III.1

Initial Interaction Analysis Categories

1.0 Child Initiation

- 1.1 Informational convergent questions or statements
- 1.2 Informational divergent questions or statements
- 1.3 Seeking support questions or statements
- 1.4 Miscellaneous (routine) questions or statements
- 1.5 Gestural initiation, pulling at sleeve, poking, patting, wave - positive non-verbal communication
- 1.6 Negative non-verbal communication

2.0 Child Response

- 2.1 Informational cognitive memory statement
- 2.2 Informational convergent statement
- 2.3 Informational divergent statement
- 2.4 Seeking support statement
- 2.5 Miscellaneous statement
- 2.6 Positive non-verbal response, smile, laugh
- 2.7 Negative non-verbal response, frown, groan

3.0 Teacher Initiation

- 3.1 Asks memory questions
- 3.2 Asks convergent questions
- 3.3 Asks divergent questions
- 3.4 Lectures
- 3.5 Gives directions
- 3.6 Criticizes or justified authority
- 3.7 Positive non-verbal communication (physical affection)
- 3.8 Negative non-verbal communication

4.0 Teacher Response

- 4.1 Praise or encouragement
- 4.2 Accepts or uses ideas of child
- 4.3 Verbal comfort
- 4.4 Information giving
- 4.5 Criticism
- 4.6 Correction
- 4.7 Positive non-verbal communication (affection displayed)
- 4.8 Negative non-verbal communication (avoidance, rejection)

the non-verbal communication categories in both the child and teacher areas were found to be too general "catch-alls", and were therefore also omitted. The non-verbal communications in these two major areas were included in the verbal categories.

The following categories were eliminated because of a lack of behavior falling in these categories, even though the categories were theoretically based:

2.4 - seeking support child statement

4.3 - teacher comfort

4.5 - teacher criticism

Also, the following categories are questionable because of the low frequency of behavior that can be coded in these categories:

1.3 - interpretive or creative child initiation

2.3 - creative child response

3.3 - creative teacher response

3.4 - teacher lectures or demonstrates

4.2 - teacher accepts or uses ideas of child.

These five low frequency behavior categories will not be included in the analysis.

The revised interaction analysis instrument is presented below in Table III.2. The accompanying definitions and decision rules are presented in Appendix B. These decision rules and definitions should enable any psychologist to utilize the interaction analysis developed in this thesis for four and a half to six year old children interacting with educators (adults).

Table III.2

Revised Interaction Analysis Categories

1.0 Child Initiation

- 1.1 Restrictive question or statement
- 1.2 Interpretive or creative question or statement
- 1.3 Seeking support question or statement
- 1.4 Miscellaneous (routine) question or statement
- 1.5 Gestural initiation

2.0 Child Response

- 2.1 Restrictive statement
- 2.2 Interpretive statement
- 2.3 Creative statement
- 2.4 Miscellaneous non-verbal
- 2.5 Non-response
- 2.6 Non-verbal compliance

3.0 Teacher Initiation

- 3.1 Restrictive question or statement
- 3.2 Interpretive question or statement
- 3.3 Creative question or statement
- 3.4 Lecture or demonstration
- 3.5 Direction - verbal and non-verbal
- 3.6 Criticism or correction

4.0 Teacher Response

- 4.1 Reiteration
- 4.2 Praise or affection
- 4.3 Accepts or uses ideas of child
- 4.4 Information giving, clarification
- 4.5 Corrective ploy or put-off
- 4.6 Non-response
- 4.7 Positive verbal or non-verbal consent or acknowledgement

III.2.4.3 Coding Procedures

The procedure used in coding the child/teacher interactions was to identify an interact by identifying either the child or teacher initiating with the other. An interaction sequence started by a gesture or word from either the teacher or one of the six selected boys. This sequence continued until the dyad was broken by another child or a change in subject. If another child broke into the dyadic interaction, this would also be coded, and the prior interaction would either be ended or interrupted. The criterion for an initiation was either a new dyadic interaction or a change in the subject of the interaction. An example could be: "What is this?" (Initiation), "It is a ball." (Response), "Is it a ball because it is round and bounces?"(Res) "Yes"(Res). Another example could be: "What is this?" (Initiation), "It is a ball." (Response). "What color is it?" (Initiation), "It is red." (Response). An example of an interrupted interaction could be: "What is this?" (Child 1 initiation), before teacher is able to answer Child 2 interrupts. However, teacher response is still recorded, even if avoidance or non-response occurs. The interaction of Child 2 is also recorded in this process. The interact continues in initiation-response-response-response sequence, until a new initiation defines a new interact. The procedure is therefore to code the identified initiations and responses in their respective categories.

The possible indications of the meaningful learning processes for the child are defined as:

1) Rating of quality of child initiation

2) Quantity of child initiation

3) Amount of child initiation - interpretive or creative questions or statements (1.2)

4) Amount of child response - interpretive statements(2.2)

5) Amount of child response - creative statements (2.3)

However, indicators 1.2 and 2.3 have such low frequencies for the pre-school classes analyzed, that they will not be included in the data analysis or presentation of findings in Chapter IV.

The following variables were seen as possible indicators of nurturing and supporting educator behavior:

1) Rating of supportiveness of teacher response

2) Amount of teacher initiation - interpretive questions or statements (3.2)

3) Amount of teacher initiation - creative questions or statements (3.3)

4) Amount of teacher response - praise or affection (4.2)

5) Amount of teacher response - accepts or uses ideas of child (4.3)

However indicators 3.3 and 4.3 have such low frequencies in the present analysis, that they will also not be included in the analysis below.

III.2.4.4 Validity and Reliability of the Interaction Analysis

The validity of the coding was insured by having an extensive training period where constant checks were made and agreement as to coding categories was reached between the coder and me. Also

the tapes were viewed at least four times each, and played back and forth to check what was viewed and heard.

In the early stages of this thesis it was decided to use VTR recordings rather than an observation procedure. This was decided on the basis that VTR recordings can be played back many times, therefore requiring only one rater. If an observation situation had been used, at least two raters would have been required, because what was observed would only happen once. Multiple observers would have to be used as checks on each other to insure that their ratings were consistent. Two main types of reliability were isolated in Chapter II above, inter-judge and intra-judge reliability. It is necessary to assess inter-judge reliability if a direct observation procedure is used and multiple judges are necessary. In other words, inter-judge reliability is necessary if one event is observed only once and is being judged, and multiple or different judges are required. Intra-judge reliability is necessary for the same event and if one judge is used, in order to assess whether the judge is consistent with himself, (see page64). Intra-judge reliability could also be used to rule out content sampling errors, by using one observer and similar events. Considering that VTR tapings and one rater were used in this thesis, it is appropriate to assess whether the rater was consistent with himself in rating the behavior on the VTR tapes. The intra-judge agreements on two occasions, after the interaction categories were finalized, were 92.4% and 89.5%. The reliability formula used was that defined by Moustakas (1956), as the number of agreements divided by the number of agreements plus the number of disagreements.

The acceptable level of reliability was set by Moustakas at 80% agreement. The time intervals used to assess reliability were the same as that used in the analysis; that is, one code every five seconds. The reliability assessment was done by comparing two records of coding that were done on different days with at least a two day interval between the records. The comparison of the records and assessment of amount of disagreement was done by comparing the codes in each five second segment. If any code was different, or any code was missed, this was counted as a disagreement.

Therefore, the interaction analysis was found to be of acceptable reliability and validity.

III.2.5 Measurement of Child Self-Concept

Based on the suggestions from the literature review that a combination of procedures should be used to measure self-concept, the following three measures were initially used:

1) a teacher's report of the child's self-concept measure (an "observation in selected situations" instrument),
2) a child's self-reported evaluative self-concept measure (a "manifest/cloaked self-report instrument), and
3) a child's self-reported descriptive self-concept measure (also a manifest/cloaked self-report instrument).

The teacher form is to indicate the teacher's rating of the child's feelings of competence and confidence, as related to his self-concept. The child self-report forms are to determine the child's evaluation of self in selected areas, and to infer the child's comfort in and atti-

tude toward the preschool setting and other participants. These measures were administered on a pre- and post-test basis, and the change in self-concept was calculated as the change of the measures from pre- to post-test situations. These measures (and accompanying instruments) were based on the summary of self-concept research and theory presented above.

Combs and Soper (1963) stated that self-report and observation (inferred) measures of self-concept are theoretically different constructs. Therefore, it is not assumed that the three measures of self-concept (teacher report, and the evaluative and descriptive parts of the child self-reported form) will necessarily provide the same data on the self-concept of the child, however an attampt will be made to compare and combine the measures. This suggests that a comparison of the different methods of measuring self-concept may not be useful in measuring validity (Coller, 1971), for there is no guarantee that the separate instruments are measuring the same construct. However, it is suggested that Part B (descriptive part) of the child self-report form and the teacher form questions are attempting to measure the same self-concept construct, and therefore the results of these two forms will be compared.

III.2.5.1 Teacher Report of Child Self-Concept

The teacher report form is proposed to indicate the teacher's rating of the child's feelings of competence and confidence, as related to his self-concept. There is a very noticeable congruence between the three major areas defined in the teacher form (see Appen-

dix C) and the items in the descriptive dimension of Part B of the child form (see Appendix D), i.e. areas of preschool program or materials, peer interactions, and teacher interaction. Part B of the child form also includes a parent interaction area.

The teacher report measure was to be filled out by the teacher on each child. The teacher report form is based on the Teacher Measurement of Pupil Self-Concept instrument developed by DiLorenzo (1969). The DiLorenzo form was to determine the teacher's perceptions of how confident and self-assured the child was with respect to the use of classroom materials and equipment, in his classroom relationships with peers, and in relationship to his teacher. The areas of interaction with materials, peers and teacher were seen to be the most relevant in a child's preschool evaluation of feelings about himself. A panel of three judges developed the form using DiLorenzo's instrument as a starting point. Some of the original items were ambiguous, overlapping, and contained more than one conceptual dimension. Therefore the criteria for the teacher report form item development were: clarity, consisting of one descriptive or evaluative concept, and having minimum overlap among items. The six point scale, representing a continuum from never to always, was developed to minimize "average" ratings and prompt a less socially desirable rating than is usually obtained. Experience suggests that raters feel more comfortable using the average to moderately high end of a scale, which was the rationale to place the definitions of the continuum off the ends of the scale. The last items of the teacher report form asks the teacher to rate the general outlook of the child on a continuum of happy to sad- which was

used to indicate the possible representativeness of the manifest-cloaked self-report measure to usual behavior or "outlook" of child. The instructions for the teacher to complete the form are stated on the form and were explained to the teachers, i.e. rate all children on item 1 first, rating each child in comparison with the other children on the same dimension. The teachers were given the form, explained its purpose and how it was to be filled out. At this time arrangements were also made as to when the forms were to be picked up (approximately five days).

III.2.5.2 Child Self-Concept Form

The child self-concept form (Appendix D) is to determine the child's evaluation of self in selected areas (Part A), and to infer the child's comfort in (and attitude toward) the preschool setting and other participants (Part B - descriptive dimension). Both Parts A and B of the child form are based on Dysinger's (1970) When Do I Smile test that was developed for elementary school children. The instructions for administration of the child form are presented in Appendix E. Dysinger used five expressive faces; three are used in the present study to accommodate the lower discriminative ability of preschool children. These expressive faces depict a continuum of happiness or feeling "okay" about things; a continuum from sad or unhappy to okay or don't care to happy or good. McMurtry and Williams (1972) have been able to demonstrate that preschool children do possess an evaluative dimension in their affective meaning systems; they found that positive evaluative adjectives and negative evaluative adjectives have a dis-

tinctive meaning for the preschool children; that children are able to differentiate between happy (or really well), don't care (or okay), and poorly (or unhappy). It has been found in two earlier projects that unhappy, sad or made are exchangeable responses, but the differences between happy and unhappy, or poorly and really well are clearly understood (Siperko, 1972, 1974). The Smile Test Administration Instructions (Appendix E) specify a very careful explanation of the response modes, with examples and practice.

The specific items in the child self-report instrument were determined by the suggestions in a literature review. Mullener and Laird (1971) suggested achievement, intellectual skills, inter-personal skills, physical skills and social responsibility, as content areas for assessing self-concept. The fifteen areas suggested by DiLorenzo (1969) also fit into the above listed content areas. However, there does not seem to be an overlap between the skill areas and achievement, and the artistic and verbal skill areas seem to have been overlooked. With these areas in mind, the nine items presented in Part A (evaluative dimension) of the self-concept form were drawn up. However, because of the suggested very general self-concept of young children, the separate items will be treated as a total indicator of evaluative self-concept.

The nineteen items developed in the Part B (descriptive dimension) self-report form, i.e. attitude toward preschool or comfort in preschool, were developed around the major areas of the preschool program: content areas of materials, interactions with peers, interactions with teacher; and an outside of preschool area, interactions

with parent. Both Parts A and B have been pre-tested with over 300 ch ldren, which allowed a deletion of ambiguous items, an addition of clarifying items, and a separation of the boy and girl items (Siperko, 1972, 1974).

III.2.5.3 Reliability and Validity

Combs and Soper (1963) stated that self-report and observation (inferred) measures of self-concept are theoretically different constructs. Therefore, it was not assumed that the three measures of self-concept (teacher report, and Parts A and B of the child form) would necessarily provide identical data on the self-concept of the child. However, an attempt was made to compare and combine the measures. It was also suggested that a comparison of the different methods of measuring self-concept may not be useful in measuring validity (Coller, 1971), for there is no guarantee that the separate instruments are measuring the same construct. However, it is suggested that Part B (descriptive dimension) of the child self-report form and the teacher form questions are attempting to measure the same self-concept construct, and therefore correlations were computed between the items and total scores of these forms. These correlations are presented below in Table III.3. The data used here to assess the reliability and validity of the self-concept measures is abstracted from the Cooperative Early Childhood Education Project Evaluation Study, 1973/74. The significance level of .20 was chosen in Table III.3 because if the .10 level of significance had been chosen, only one or two of the correlations would have been significant.

TABLE III.3

COMPARISON OF TEACHER AND DESCRIPTIVE CHILD SELF-CONCEPT ITEMS
Correlation (r values) of Total Scores to Individual Scores

(N= 62, SAME SAMPLES FOR PRE AND POST, MATCHED)

SMILE ITEMS	TEACHER TOTAL SCORE	
	Pre	Post
1. When in school	.00	.08
2. Playing games in school	-.10	.08
3. Making something with clay in school	.04	.10*
4. When you have music	.15*	.13*
5. Telling a story at school	.17*	-.11
6. Listening to a story	-.15	-.16
7. When everyone is moving...	-.22	.04
8. Teacher has you work by yourself	.30*	.08
9. Teacher makes everyone keep quiet	-.19	.02
10. Teacher has you work with other children	-.02	-.06
11. The boys in room feel about you	.03	-.05
12. The girls feel about you	-.01	.13*
13. The teacher feels about you	-.05	.02
14. Teacher feels about boys	-.13	-.09
15. Teacher feels about girls	.22*	.08
16. Feel about teacher	.06	.04
17. Boys and girls feel about teacher	.12*	-.02
18. When you ask mother ... questions	-.17	.03
19. You help your father or mother	.00	.15*
TOTAL SMILE SCORE	.02	.02

TEACHER ITEMS	SMILE TOTAL SCORE	
	Pre	Post
1. Is creative-unconventional uses	.03	-.08
2. Sees self is capable	.10*	.21*
3. Responds well to artistic materials	.00	-.07
4. Responds well to musical materials	-.09	.20*
5. Able to verbally express self	-.02	.04
6. Able to perform large motor activities	.04	.01
7. Masters personal clothing	.11*	-.05
8. Free from self-consciousness	-.10	.04
9. Invites others to play	-.21	.01
10. Shows appreciation for classmates	.07	.20*
11. Able to assist classmates	.01	-.04
12. Regards self as helpful	.07	-.16
13. Reacts positively to teacher	.16*	.10*
14. Comfortable about physical contact with teacher	-.13	-.02
15. Feels teacher thinks well of accomplishments	.11*	-.05
16. Is curious about things teacher says	.10*	-.02
17. Relates to teacher by smiling	-.07	-.22
18. Feels he is well-liked by teacher	.05	-.04
TOTAL TEACHER SCORE	.02	.02

* Correlations are positive and significant at the .20 level.

SOURCE: COOPERATIVE EARLY CHILDHOOD EDUCATION PROJECT EVALUATION STUDY, 1973/74.

The correlations in Table III.3 are r values, and based on the same sixty-two children for pre- and post-testing, matched on teacher and smile results. From this data it can be seen clearly that there is very little correlation between the two measures, if any. The total scores are not related, neither for the pre-test nor post-test situations. Also only a few of the individual items are related to the total scores of the other measure, and these correlations are seldom consistent across pre- and post-test situations.

In an attempt to explain why these two measures or instruments seem to be measuring different constructs, the total sample of sixty-two children was split by sex into female and male sub-samples. The mean scores of these two sub-samples by self-concept measure and test situation are presented below in Table III.4.

Table III.4

COMPARISON OF MEAN SCORES BY SEX SUB-SAMPLES
OF TEACHER AND DESCRIPTIVE CHILD SELF-CONCEPT MEASURES*

	Child Self-Concept Mean Scores (Descriptive)		Teacher Self-Concept Mean Scores	
	Pre	Post	Pre	Post
Female	46.4	46.8	83.9	90.0
Male	47.0	49.0	83.0	89.4

* Source: Cooperative Early Childhood Education Project Evaluation Study, 1973/74.

From the data presented in Table III.4 it can be seen that there is no significant difference between the average teacher self-concept scores for boys versus girls, for both testing situations. This suggests that the teachers in this study did not rate females and males differently in terms of self-confidence. Also the data in Table III.4 suggest a trend in the change of the self-concept measures from pre- to post-test situations. The change is much more marked for the teacher than the child self-concept measure, for both females and males. This may suggest a stability in the children's perceptions of themselves, and also suggests that the teachers may have expected change in the children's self-concepts and therefore may have been looking for change.

Another attempt to assess the validity of the self-concept items, was a validity assessment of the evaluative dimension (Part A) of the child self-report measure. At the post-test time not only were the children asked to assess themselves evaluatively on the nine items, but the teacher also evaluated the children on the same nine items. The child measure item by teacher measure item correlations were not positive or noticeable, except for the item "how well do you (does the child) play with girls" ($r=.35$). The two total scores for the child and teacher set of nine items were also not related ($r=.02$). These findings suggest that the teacher evaluative ratings of the child are not related to the child's ratings of himself.

Also as mentioned above, an attempt was made to assess how congruent the child's perception of himself was to his teacher's perception of his "general outlook". However, there was only a slight correlation between the post-test total score and the teacher's perception of the child's general outlook (r=.15). This again suggests that there is very little relationship between the teacher's perceptions of the child and the child's perceptions of himself.

Therefore, it can be said that the construct validity of the self-concept measures has not been proven. However, it is felt that the three instruments are measuring three separate constructs; that is, the teacher's perceptions of the child, the child's evaluative perceptions of himself, and the child's feelings of comfortableness with himself. The three separate instruments have theoretical validity, though the descriptive child self-concept instrument is preferred because of less obvious respondent bias. This findings is congruent with the Combs and Soper (1963) suggestion that self-report and self-concept are definitely different measures; and is also congruent with their finding that there is no significant relationship between the self-concept of the child assessed by others and the self-reports of self-concept obtained from the children (see pages 76 and 77 above).

Both parts of the child self-report instrument, and the teacher report form, are situation and time based. Perceptions and feelings are very changeable, and therefore these instruments are measuring very unstable data. The internal consistency (reliability) of the measures was also assessed. The KR-20 of the suggested theo-

retically related items was assessed for the evaluative dimension of the child's self-report (Part A), the descriptive dimension of the child's self-report (Part B), and the teacher report of the child's self-concept; for both the pre- and post-test results. These statistics are presented below in Table III.5.

Table III.5

RELIABILITY (KR-20) SCORES FOR THE SELF-CONCEPT MEASURES*

Measures	Reliability Scores Pre-Test	Post-test
1) Child Descriptive		
Total	.58	.67
Pre-school	.61	.75
Grade one	.54	.74
2) Child Evaluative		
Total	.20	.64
Pre-school	.24	.73
Grade one	.21	.81
3) Teacher		
Descriptive	.90	.88
Evaluative (Post Only)		.54

* Source: The Cooperative Early Childhood Education Project Evaluation Study, 1973/74.

From the data presented in Table III.5 it can be seen that the child evaluative instrument for the pre-test situation is the only instrument that is of questionable reliability. The possible reasons for this low reliability could be coding errors, punching errors, computing errors, testing errors, etc. All of these possibilities were checked out, and the most probable source of error was testing error; that is, one or some of the testers didn't know what they were doing and therefore, introduced bias or recorded the responses incorrectly. Another list of reasons was suggested by Combs and Soper(1963) (see pages 76 and 77 above). These results would suggest that the factors of "willingness of individuals to co-operate, social expectancy, or feelings of freedom from threat" may have been very real for these young children. Whatever the reason, because of the low reliability of the evaluative child self-concept measure, this measure can not be used to measure self-concept in this present thesis.

The pre-school child descriptive instrument results were further divided into younger pre-school and older pre-school samples. The resultant KR-20 scores indicate that this instrument produces the most reliable data for the older pre-school sample (over five years old on the pre-test, and over five years six months at the post-test situation). This suggests that the child descriptive self-concept instrument is more reliable for five to five and a half year olds, and is also most reliable in testing children who have been in the school routine for a number of months.

A careful look was taken at the correlation between the individual items in each instrument and the accompanying total score. However, all the individual items were significantly correlated to their accompanying total scores. Therefore, the total scores for the child descriptive self-concept and the teacher descriptive self-concept instruments are definitely representative of the combination of their respective individual items.

Therefore, at this time it can be said that the child descriptive self-concept and the teacher report measures are definitely internally consistent and can be well represented by one total score for each measure. Both of these measures also have theoretical validity, but do not measure the same constructs. The teacher measure may be measuring a different self-concept construct or may be influenced by teacher bias in perceptions. If one measure, and only one measure, must be used, a preference will be given to the child measure versus the teacher measure, because of the greater possibility of bias in the teacher measure.

Change scores will be developed for the six boys included in the interaction analysis for both the child and teacher descriptive self-concept measures. These change scores are simply the post-test total score minus the pre-test total score. The results of this analysis are presented below in Chapter IV.

III.2.6 Meaningful Learning Process in Relation to the Child Development Product (Self-Concept)

For the six boys selected for the thesis, an indication of the expected finding that meaningful learning processes will more likely take place in interaction with nurturing and supporting educators, will be visually assessed in order to determine if a relationship does exist between the identified learning processes and the possible self-concept change of the child.

A quantitative rank, based on each boy's comparative position to the other boys will be assigned to each boy for each of the identified variables, and the ranks will be visually and descriptively compared. These results will be presented below in Chapter IV.

CHAPTER IV

PRESENTATION OF FINDINGS

The data analysis and findings will be presented in this chapter under the main headings of: description of the teacher and classroom, interaction analysis results, an examination of the findings in relation to Expectation I, self-concept indicators and change, the relationship of the interaction analysis results (meaningful learning processes) to the self-concept change (the examination of the findings in relation to Expectation II), and a summary of the findings.

IV.1 Description of the Teacher and Classroom

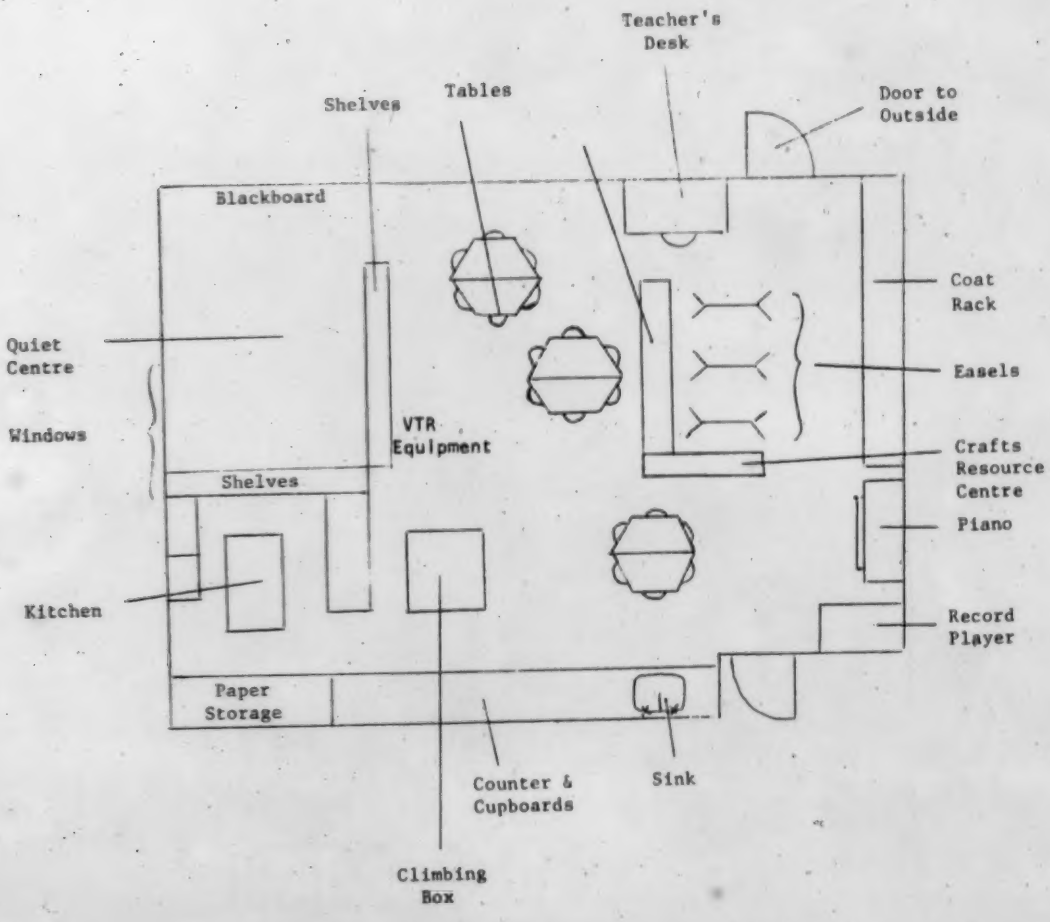
As suggested in Chapter III, the classroom and teacher descriptions were developed in relation to three other classroom and teacher descriptions, for a larger study, the Cooperative Early Childhood Education Project Evaluation Study, 1973/74 (see pages 90 to 91, Chapter III).

IV.1.1 The Classroom

In the discussion of this classroom please refer to Figure IV.1.

Figure IV.1

ORGANIZATION OF CLASSROOM



The classroom is divided into a number of sub-areas, used mainly for specific subject areas. The central L-shaped portion of the room is occupied by one large and one small grouping of tables and chairs, and a climbing box. This is bounded on one side by low shelves. To one side is an area for painting with a series of easels, and further over are the coats and individual mailboxes. On that same side near the door is a music area, with a piano and record player. A shelf at the end of the painting area stores paper, scissors, and other craft supplies. Along the opposite side of the room is the rug area or quiet centre, again bounded by shelves and a play kitchen with wooden child size appliances and furniture. The front wall has blackboards and charts along it, with the teacher's desk against it near the art area. The rear wall has a counter and cupboards, with a sink. Close to the sink, is a water basin full of colored water and several toy boats. The atmosphere of the room is generally uncluttered and organized, with plenty of room in each area to work. The classroom had approximately twenty-four students in attendance.

The furniture appears to meet all the requirements for suitability in a preschool room: appropriate size, cheerful colors, very practical and mobile. The low shelves serve as dividers to keep a more open atmosphere in the room, and they serve as areas to store games, books, and kits as well as being counter areas on top. Within the specific subject areas, the resources are used mainly for a single purpose.

The VTR camera was kept in a central place in the classroom. The camera was easily turned all around the room to follow the interactions occurring. A microphone-mixer was used to pick up the audio from microphones situated in three major places in the room.

The preschool session is distinctly structured, as a certain amount of time is allotted for each activity. This schedule is usually closely adhered to.

An excellent variety of materials and facilities are at hand in this classroom. In the way of larger facilities, there is a type writer, piano, record player, earphones, musical instruments, large globe, pillows for sitting on the floor, felt board, easels; and a scale size kitchen with furniture, dress-up clothes, utensils and food containers. A projector is brought in frequently and regularly for the showing of short films. The school itself is well equipped with audio-visual equipment. An abundance of learning games, kits, and toys are at hand, and these are constantly in use. Bright pictures, posters, and charts are displayed on the walls along with the children's work. The class has a pet mouse as well. Paper, scissors, glue, string and other craft needs are available as required.

In addition to the teacher, there is often a volunteer parent aide present, and two mornings per week a paid teacher aide comes in.

IV.1.2 The Teacher and Her Procedures

The procedures used in the classroom are presented below in Table IV.1

Table IV.1*

PROCEDURES OF SELECTED CLASSROOM TEACHER

Type of Approach to Learning	Nature of Acticities (Subject vs Environment)	Control	Teacher/Child Relationship	Orientation of Teacher	Familiarity With Individual Characteristics Of Children
1. directive (passive) 2. teacher initiated although pupils do come to her to get help with words. 3. basically individual - few co-operative ventures even in unstructured situation	Songs (few), show and tell, most emphasis is placed on academic endeavours, e.g. learning the alphabet, concepts, the sounds of the letters, as well as learning to count.	1. Control is very important, a great deal of control. 2. Nothing overt but subtle types of criticism such as the "tone of teacher's voice" and "looks" given to the children. 3. Very persistent and consistent enforcement of rules. Much use of hands to get attention, e.g. "eyes up", hands behind back while singing, hands in front for counting, cannot lean on furniture, makes students stand in corner for misbehaving.	Children must go through the proper channels to speak to teacher. No spontaneous affection shown the teacher. Not really a close teacher/child relationship in this classroom. Children may not need too much attention or affection. Teacher has patience, little physical contact.	Interesting Very academically oriented Emphasizes readiness for Grade one among her pupils, e.g. can pupil tie his shoes. Spends more time with certain pupils.	Helps children on individual basis especially with academic subject matter. Much time devoted to show and tell. Children can talk about things which interest them.

*Source: The Cooperative Early Childhood Education Project Evaluation Study, 1973/74.

From the description presented in Table IV.1, it can be seen that the teacher was mainly directive, initiated a majority of the interactions, placed a heavy emphasis on academic endeavours, used a great deal of control and subtle criticism, was very consistent and persistent in the enforcement of rules, displayed quite a lot of patience, had little physical contact with the children, placed an emphasis on readiness for grade one, and spent more time on some individual children than others. Also this class had some parent assistance, was highly structured, and used smaller groups of children to teach academic skills. This description can be used to compare the results described in the following sections with other pre-school class situations.

IV.2 Interaction Analysis Results

After the VTR tapes were coded and of acceptable reliability, the number of behaviors occurring in each category were tallied for each child. The amount of time each child was eligible (in the room and visible) to be interacting with his teacher was also recorded.

Two tapings were made of the class interactions, one in March, 1974 and one in May, 1974; with approximately nine weeks between the two tapings. The number of behavior units within each category was tallied for each child and each taping. There was a very high congruence between the two taping tallies for each child, and therefore an average score for the two tapings was computed for each child. This score was computed as the average number of interactions

per minute; that is, dividing the number of tallies by the number of minutes for each of the two tapings and then computing an average score. These average scores are presented below in Table IV.2 by interaction category.

As stated in Chapter III, the originally developed categories 1.2, 2.3, 3.3, 3.4, and 4.3 have very low tally frequencies for both tapings and therefore were excluded from the analysis. Also a total quantity of child initiation score was calculated for each child by adding up the scores in each of the child initiation categories. The length of codable time (see page 94) per child varied from 159.75 to 212.75 minutes for the pre-test, and varied from 209.1 to 309.5 minutes for the post-test.

The developmental psychologist, who completed the interaction analysis, and a research assistant ranked the six observed and taped children on the following two rating or summary variables: quality of child initiation and supportiveness of teacher response (see page 97). The ranking range was from 1 (low) to 6 (high) and these rankings are presented below in Table IV.3. Table IV.3 also presents an average rating by each variable and child. The mean of the two individual ratings assigned to each child was calculated if the two ratings differed.

Table IV.2

INTERACTION ANALYSIS SCORES*

Interaction** Category	Children 1	2	3	4	5	6
1.1	.04	.03	.03	.02	.01	.01
1.3	0	.04	.02	.02	.02	0
1.4	.02	.04	.03	.08	.02	.01
1.5	.04	.04	.08	.06	.03	.02
Total Initiation	.10	.14	.16	.18	.08	.04
2.1	.12	.10	.20	.11	.06	.04
2.2	.11	.06	.10	.05	.05	.02
2.4	.01	.04	.01	.03	0	.02
2.5	.02	.04	.02	.03	.01	.02
2.6	.10	.06	.14	.12	.07	.08
3.1	.14	.12	.19	.16	.05	.06
3.2	.10	.08	.13	.05	.05	.04
3.5	.10	.08	.14	.14	.08	.08
3.6	.02	0	.01	.02	.01	0
4.1	.02	.02	.04	.01	.01	.01
4.2	.04	.01	.03	.03	.02	.03
4.4	.04	.01	.04	.06	.03	.01
4.5	.03	.02	.03	.01	.01	.01
4.6	.02	.04	.02	.04	.01	0
4.7	.10	.12	.17	.12	.07	.06

*Score is computed as the average number of interactions per minute.

**See page 98 above for a description of the interaction analysis categories.

Table IV.3

RATING OR SUMMARY ANALYSIS OF QUALITY OF CHILD INITIATION AND SUPPORTIVENESS OF TEACHER RESPONSE

Summary Variables	Rating	Children 1	2	3	4	5	6
1. Quality of Child Initiation	1	6	3	5	3	2	1
	2	6	3	4	5	2	1
	Av.	6	3	4.5	4	2	1
2. Supportiveness of Teacher	1	4	3	5	3	2	1
	2	5	2	6	4	3	1
	Av.	4.5	2.5	5.5	3.5	2.5	1

From the data presented in Table IV.3, it can be seen that the ratings made by the two professional observers were very similar for each child. The major differences were in the ratings for Child 4; however if this difference is averaged, the comparative rank for this child remains the same.

From the raw scores presented in Table IV.2 and the rating data presented in Table IV.3, the data presented in Table IV.4 and Table IV.5 were developed, which presents the rankings of the meaningful learning process indicators and the rankings of the indicators of nurturing and supporting educator behavior.

Table IV.4

RANKINGS OF MEANINGFUL LEARNING PROCESS*

Indicators	Children 1	2	3	4	5	6
Amount of interpretive child response (2.2)	6	2	5	3.5	3.5	1
Quality of child initiation	6	3	4.5	4	2	1
Quantity of child initiation	3	4	5	6	2	1
Summary Rank Indicator of Meaningful Learning	6	3	5	4	2	1

* A rank of 1 = low, a rank of 6 = high.

The data presented in Table IV.4 shows the agreement and similarity among the three suggested indicators of meaningful learning processes. Children 1 and 3 are definitely ranked the highest (with predominant ranks of 6 and 5 respectively), and Child 6 is definitely ranked the lowest (with ranks of 1). Therefore a Summary Rank Indicator of Meaningful Learning was assigned to each child, as indicated in Table IV.4. These interaction analysis results will be compared to the self-concept change results in a following section (Section IV.5).

The data presented in Table IV.5 shows a good deal of agreement among the three suggested indicators of nurturing and supporting educator behavior. Child 6 had a predominantly low rank (two ranks of 1) and Children 1 and 3 had the high ranks of 5, 5.5, and 6. Therefore a Summary Rank Indicator of Nurturing and Supporting Educator Behavior was assigned to each child in Table IV.5

Table IV.6 presents a comparison of the two Summary Rank Indicators developed in Table IV.4 and Table IV.5

Table IV.5

RANKINGS OF NURTURING AND SUPPORTING EDUCATOR BEHAVIOR*

Indicators	Children 1	2	3	4	5	6
Amount of interpretive teacher initiation (3.2)	5	4	6	2.5	2.5	1
Amount of teacher praise or affection (4.2)	6	1	4	4	2	4
Supportiveness of teacher response	4.5	2.5	5.5	3.5	2.5	1
Summary Rank Indicator of Nurturing and Supporting Educator Behavior	5.5	3	5.5	4	2	1

* A rank of 1 = low, a rank of 6 = high.

Table IV.6

COMPARISON OF SUMMARY RANK INDICATORS OF MEANINGFUL LEARNING PROCESSES AND NURTURING/SUPPORTING EDUCATOR BEHAVIOR*

Summary Rank Indicators	Children 1	2	3	4	5	6
Meaningful Learning Processes	6	3	5	4	2	1
Nurturing/Supporting Educator Behavior	5.5	3	5.5	4	2	1

* A rank of 1 = low, a rank of 6 = high.

IV.3 Examination of Findings in Relation to Expectation I

The first expectation stated was that - meaningful learning processes for a child will more likely take place in interaction with nurturing and supporting educator behavior.

From a visual examination of the ranked data presented in Table IV.6 it can be seen that the summary rank indicators of meaningful learning processes and nurturing/supporting educator behavior correspond almost exactly. The only differences are that the summary rank indicators vary by a rank of .5 for Children 1 and 3. This finding would give a rather strong indication that what was expected (as stat-

ed in Expectation I) was in fact found; that is, meaningful learning processes are more likely to take place when the child interacts with a nurturing and supporting educator.

IV.4 Self-Concept Indicators and Change

Self-concept scores were developed for each child for each of the developed self-concept measures that it was shown had high internal consistency; that is the descriptive child self-concept and the descriptive teacher self-concept measures. From these scores two self-concept change scores were also developed. The change scores were calculated as the difference between the pre- and post-test scores. The pre-test and post-test scores, and change scores for the six selected boys are presented below in Table IV.7

It can be seen from the data presented in Table IV.7 that four of the six selected boys measured a definite positive self-concept change (i.e. over 5 points change) in the child self-concept measure.

Table IV.7

SELF-CONCEPT TEST AND CHANGE SCORES*

	Children					
	1	2	3	4	5	6
Child Descriptive Self-Concept Pre-test Score	37	47	47	41	41	38
Child Descriptive Self-Concept Post-test Score	48	43	53	41	49	43
Change Score	+11	-4	+6	0	+8	+5
Rank	6	1	4	2	5	3
Teacher Self-Concept Pre-test Score	79	81	87	84	73	77
Teacher Self-Concept Post-test Score	93	105	83	87	82	76
Change Score	+14	+24	-4	+1	+9	-1
Rank	5	6	1	3	4	2

*Please refer to pages 136 to 142 below for a description of each individual child.

These children were: Child 1, Child 3, Child 5, and Child 6. One of the six boys did not measure any change at all (Child 4), and one child (Child 2) measured a negative change. According to the teacher self-concept measure, three of the six children measured definite positive self-concept change (i.e. 9 points of change and over). These children were: Child 1, Child 2, and Child 5. Two of the six children measured negative change, Child 3 and Child 6. This suggests that the two self-concept measures were consistent for only three of the six children; i.e. Child 1, Child 4, and Child 5. However, this is not surprising, as it has already been concluded that the two internally consistent measures are measuring two different constructs; with the teacher measure possibly being influenced by a halo effect of a number of the children's characteristics.

Another important observation is that some of the children who scored lower on the self-concept pre-test also measured the most positive self-concept changes; especially Child 1 and Child 5. Important exceptions to this observation are Child 2 for the teacher self-concept scores, and Child 3 for the child self-concept scores. It is also important to remember that the range of scores for the teacher measure was wider than the range of scores for the child measure. There is a methodological concern in using change scores in isolation from other data. The children who scored high on the pre-test had much less room for change. However in this situation all the children who were selected were chosen on the basis of their relatively low pre-test scores.

IV.5 Relationship of Interaction to Self-Concept Change (Expectation II)

The relationships of the meaningful learning process indicator (rank scores) to the self-concept change scores (ranks) are presented below in Table IV.8, by each individual child.

Table IV.8

RELATIONSHIP OF MEANINGFUL LEARNING INDICATOR TO SELF-CONCEPT CHANGE SCORES

	Children					
	1	2	3	4	5	6
Summary Meaningful Learning Indicator	6	3	5	4	2	1
Rank of Child Self-Concept Change Score	6	1	4	2	5	3
Rank of Teacher Self-Concept Change Score	5	6	1	3	4	2

The second expectation was that - meaningful learning processes for a child in interaction with an educator will be related to the development of a more positive self-concept for the child.

In visually examining the rank scores presented in Table IV.8, it can be seen that for Children 1 and 6, the rank scores are relatively consistent. For Child 1, ranks of 6, 6, and 5 are consistently high. For Child 6, ranks of 1, 3, and 2 are relatively low. However the ranks for Children 2, 3, and 5 are both high and low. The greatest degree of data inconsistency is inherent in the rank scores for Child 2; a rank of 1 and a rank of 6 are direct opposite extremes. The data for child 4 is relatively low to low-medium, with ranks of 4, 2, and 3. On the basis of this information, it can be stated that the expected relationship between meaningful learning processes and an indicator of the learning process as a product (the development of a more positive self-concept for the child) seemed to be approximated for only three of the six children studied. Therefore what was expected was not consistently found. It is hoped that a future study of the expected relationships will be carried out with a sample of children, so that the relationship between meaningful learning indicators and the development of a self-concept can be statistically assessed.

It may be enlightening to describe briefly each of the six selected children as to their overall characteristics, and tie in the results of the above analysis presented in Table IV.8. These profile analyses are based on the observations of the child, discussions with the teachers and parent involvement questionnaires.[1]

Child 1 This child was a very vocal and active boy. He always seemed to be in the middle of some mischief. He also seemed relatively comfortable with his playmates and surroundings, particularly during the post-test situation. This boy was the third of four children, and had two older sisters. His father and mother both had experience working in the school system. The mother was not now working. The mother stated on her parent involvement questionnaire that she felt parent involvement was both important and feasible. This mother was moderately involved in her child's education program, which also included outside the home involvement.

From the data presented in Table IV.7, it can be seen that Child 1 scored relatively low on the pre-test child self-concept instrument. The teacher also scored him relatively low, as compared to the other five selected boys. However,

[1] A random sample of all the parents involved in the Cooperative Early Childhood Education Project were asked to complete a parent involvement questionnaire for the evaluation study. However these results were not available for all of the six children's parents because of the random sampling procedure used. Mainly, the demographic data from this questionnaire were extracted for use in this thesis.

this child is consistently shown to have positively and markedly changed in self-concept, according to both the child and teacher measures. This suggests that this boy has definitely developed a more positive self-concept from pre- to post-test situations.

From the data presented in Table IV. it can be seen that this boy had a very positive relationship with his teacher, which is indicated by a high meaningful learning score.

Therefore, it can be seen that for Child 1 meaningful learning processes seemed to be related to the development of a more positive self-concept.

Child 2 This child was a relatively slow moving boy. He had a slight speech impediment, which did not seem to bother him. The teacher seemed to relate to him in a relatively detached manner. This child was the second of three male children in his family. His mother was not working, and his father had a white collar job. The mother stated she felt parent involvement was both important and feasible on her parent involvement questionnaire. She also stated that she did not know much about the child's education project, however did say she expected more readiness training than Child 2 had acquired. This mother was only minimally involved in her child's education program.

From the data presented in Table IV.7 it can be seen that Child 2 was the only one of those selected who scored lower on the post-test than on the pre-test child self-concept instrument. However, it is also interesting to note that this child scored relatively high on the pre-test situation for the child self-concept measure. Also of interest is the trend of the teacher measure from pre- to post-test situations; for this child showed a marked positive gain on the teacher self-concept scores. This boy was rated average on the teacher pre-test measure, compared to the other five selected boys. The post-test teacher measure score was very high, higher than the scores for any of the selected children. It could be that the teacher observed a change that was not obvious to the boy himself.

From Table IV.8 it can be seen that Child 2 ranked lowest in terms of the child self-concept change scores, but highest in terms of the teacher self-concept change scores. From these results it can be seen that there is no relationship between the various data for this child. This is particularly true because of the negative relationship between the child and teacher self-concept change score ranks.

Child 3 This child was a relatively small and cute boy. He seemed very dependent on the teacher, and was continually demanding her attention. The teacher seemed relatively suppor-

tive of this child, but she did state some concern over his reluctance to try new things on his own.

From the data presented in Table IV.7 it can be seen that Child 3 scored relatively high on the child self-concept measure for both the pre- and post-test situations, and in fact showed a positive change from pre- to post-test situations. However, the teacher self-concept data are contradictory to the child self-concept data. The teacher rated him higher than the other five selected children on the pre-test situation, but scored him lower on the post-test situation. This change in teacher scores suggests that this child was perceived to have gained nothing in terms of self-concept.

The data in Table IV.8 show that there was no relationship between the two self-concept change rank scores, but there is an indication of a relationship between the ranks of the scores for the summary meaningful learning indicator and the child self-concept measure.

Child 4 This child was a relatively smaller boy, who seemed relatively detached from and uninterested in what was happening in the classroom. He also had a clear "I don't care attitude" about his performance on assigned tasks.

From the data presented in Table IV.7 it can be seen that This child scored average on both the pre- and post-testing situations for the child self-concept measure, and therefore did not show any self-concept change according to the child measure. The data from the pre- and post-testings for the teacher measure are very similar, with just a very small positive self-concept score change from pre- to post-testing.

The rankings of the three indicators presented in Table IV.8 for Child 4 are similar, average to low-average for all indicators. Therefore, it can be stated that for Child 4, as for Child 1, the data are similar across all indicators; that is there is some indication of a relationship among the rankings of meaningful learning and self-concept indicators.

Child 5

Child 5 was another small and also fragile boy. He had a twin sister in the same class. His sister seemed to outperform him on most tasks within the pre-school setting. He seemed rather shy and withdrawn, while his sister was more sociable and vocal.

From the data presented in Table IV.7 it can be seen that this child changed a similar amount on both the child and teacher self-concept scores. Both changes were also appreciable and positive. Child 5 was also scored the lowest

of the six selected children on the teacher self-concept measure.

From the data presented in Table IV.8 it can be seen that for Child 5 there was a relationship between the self-concept change scores; and there was not a relationship between the summary meaningful learning indicator and the teacher self-concept change score.

Child 6 This child was one of the "problem" children in the class. He seemed to come from a "rougher" home environment than the other children. This may have been one of the factors in why he did not relate to his teacher as well or develop as positive a self-concept as the other five boys. He delighted in antagonizing and annoying his teacher, and did not seem very interested in learning what was being presented. He did seem to get along relatively well with some of the boys in the class. This child was the youngest of six children; the oldest child in his family was twenty years old. The father was a blue collar worker, and the mother had a sales job. Both the mother and father completed a parent involvement questionnaire. The father stated he did not know anything about the child's education project, did not think parent involvement was important or feasible, and indicated he was not at all involved in his child's education. The mother stated that she also was not aware of the child's education project, felt parent in-

volvement in children's education may be important and was feasible, and indicated some involvement in her child's program.

It can be seen from the data presented in Table IV.7 that this child had a minimal change in self-concept scores for the teacher measure. The pre-test child self-concept score was the second lowest of the six selected children. However, Child 6 had a noticeable change in the child self-concept score on the post-test, though still only third in the amount of positive change.

The data presented in Table IV.8 show that for Child 6, as was the case for Child 1 and possibly for Child 4, there was a relationship among the indicators of meaningful learning and self-concept change. The clearest relationship can be seen between the meaningful learning indicator and the teacher self-concept change score for Child 6.

From the above analysis it can be seen that the expected relationships between the measures of self-concept and the meaningful learning indicator were not consistently present for all of the six boys selected. The data for Child 1, Child 6 and Child 4 (possibly) were most closely and positively related. However there seemed no consistent relationship for Child 3, Child 5, and especially Child 2.

The profile data can explain in part, the possible reasons as to why the expected relationships were not realized for all the selected children. As suggested in Chapter III (and based on Yarrow and Waxler, 1971, etc.) any one teacher can react very differently to individual children, depending on the child's characteristics and actions. This in fact was supported by the various profiles described above.

IV.6 Summary

Chapter IV addresses the questions of:

1) How can the classroom and teacher selected for this thesis be characterized, so as to allow for the inference to be made from the findings?

2) What were the interaction analysis results?

3) Was Expectation I supported?

4) What did the self-concept measures and self-concept change scores indicate?

5) Was Expectation II supported; that is, what was the relationship of the interactions of child and teacher to the child's self-concept change (if any)?

The classroom selected for this study was characterized as rather open structurally, with many materials and supplies, interest areas, and a special carpeted area for group activities. The teacher was rather highly structured in her procedure, used parent volunteers in the classroom, and used ome grouping techniques that were usually based on the children's interests. Some of the teacher characteristics

were: mainly directive, initiated a majority of the interactions, placed a heavy emphasis on academic endeavours, used a great deal of control, etc.

For the interaction analysis, an average score was calculated for the two tapings and for each interaction variable, and each child. These scores were computed as the average number of interactions per minute. Along with these variables, the quality of the child's initiation and the supportiveness of the teacher's response were also rated. All the meaningful learning process variables and nurturing/supporting teacher behavior variables were then ranked across children. Clear trends could be seen in the ranks across the variables for each child. Therefore summary rank indicators of meaningful learning processes and nurturing/supporting teacher behavior were assigned to each child. Visual examination suggests, that meaningful learning processes for a child will more likely take place in interactions with nurturing and supporting educator behavior.

Two self-concept change scores were assigned to each child, the descriptive child self-concept measure and the descriptive teacher self-concept measure. Both of these self-concept measures are of assumed theoretical validity and have high internal consistency. As indicated in Chapter III, little relationship was found between the results of the child self-concept and teacher self-concept measures.

In reviewing the child self-concept score changes for the six selected children, it can be seen that for only four of these children was a definite positive self-concept change indicated. For

the teacher self-concept score change measure, only three out of the six children indicated a definite positive self-concept change. One child measured no self-concept change, and two children measured a negative self-concept change. The only slight relationship between the two self-concept measures developed was again indicated by the fact that for only half of the children were the results consistent across the two measures.

When the summary indicator of meaningful learning was related to the indicators of self-concept change, a consistent and positive relationship was suggested for two (possibly three) of the six children.

Brief profile analyses were presented for each of the selected children. These profiles confirmed the fact that hard data alone do not always give a clear picture of young children and their development. In the descriptions of the selected children many examples can be found that help explain the data inconsistencies when they exist. These descriptions also support the past research and theory; in that any one teacher reacts very differently to individual children, depending on the child's characteristics and actions.

The second stated expectation was not consistently realized in the data analysis. That is, on the basis of the data analysis it can not be stated that meaningful learning processes for a child in interaction with an educator will be related, <u>always</u> and <u>consistently</u>, to the development of a more positive self-concept for the child.

CHAPTER V

CONCLUSIONS AND IMPLICATIONS

The conclusions and implications based on the findings of this thesis will be discussed in terms of methodology and theory.

V.1 Methodological Conclusions and Implications

Once meaningful learning processes, and curiosity and initiative behavior, had been theoretically defined by an extensive literature review, a careful analysis was carried out as to how these processes could be mapped and how meaningful learning could be operationalized. The present study focused on behavior that identifies meaningful learning processes for the preschool child, and did not attempt to define all the behavior observed. The following behaviors were focused on: unstructured situations, reciprocal relationships between learner and environment, how input is given and received, dyadic (one-to-one) interactions, and one educator and several children.

Weick (1968) had suggested that when children interact with adults, the interactions are simple action and reaction. However the present study found that the most common type of interaction was initiation-response-response, or a double interact as suggested by Medley and Smith (1964) and Cherry (1975).

The dyadic interaction as a source of the data proved very satisfactory. This supports the suggestions of Sears(1951), English and English (1958), Cherry (1975), and Yarrow and Waxler (1971), as to the utility of dyadic relationships.

Also, the mutual influence of child on educator, and educator on child (as suggested by Cherry (1975), Smith and Green (1975), Bell (1968), etc.) was supported in this thesis.

A number of sources were reviewed on the types of methods that could be used for identifying or measuring meaningful learning processes. Rosenshine and Furst (1973) suggested the use of high inference (rating scales) and low inference (category systems) items. This suggestion was incorporated into this thesis, and the combination of a category system and rating scales proved very satisfactory. The rating scale variables were found to be highly and positively related to the category variables, and these two sets of variables were combined into composite indicators of meaningful learning processes and nurturing/supporting teacher behavior.

It was suggested by Rosenshine and Furst (1973) and Rose, Blank and Spalter (1975) to use not only broad items like rating scales and more focused items like a category system to define the process variables, but also that the more focused items could be used to identify the specific components of the broad items. However, it was found in this thesis that not only were the focused process items more specific than the broad items, but that both types of process items were positively related to the outcome variables.

Medley and Mitzel (1963) suggested that the process items by themselves may not be related to the outcome items, but that the strength of the relationships would be increased if the individual items were put together in a composite scale. In this thesis, the three individual meaningful learning process indicators were so closely inter-related, that one composite meaningful learning indicator was developed. These three separate meaningful learning indicators were: quality of child initiation, quantity of child initiation (as broad variables); and amount of interpretive child response (as a focused item or category). Also three individual nurturing/supporting teacher behavior indicators were very closely inter-related and developed into one composite indicator. These three seaprate indicators were: supportiveness of teacher response (as a broad variable); and amount of interpretive teacher initiation, and amount of teacher praise or affection (as focused items or categories).

The usefulness of VTR tapings in unstructured classrooms is limited by the quality of the sound of the tapings. It was found that VTR tapings could only be used on relatively structured classrooms, with a low noise level.

On the basis of an extensive review of eleven studies that dealt with categorizing the interaction between an adult (teacher) and child, an initial interaction analysis category scheme was developed. These categories were based on the premises of dyadic relationships and interacts, and therefore contained the child initiation, child response, teacher initiation, and teacher response basic sections; similar to the Flanders(1970) scheme. The main sources of this initial interaction

analysis scheme were: Guilford (1956), Moustakas, Sigel and Schalock (1956), Gallagher and Aschner (1963), Flanders (1970), Fagot (1973), and Zahorik (1968).

This initial interaction analysis category scheme was not completely satisfactory. It was found that Gallagher and Aschner's (1963) categories based on Guildford's (1956) theory, did not apply to four and a half to six year old children. During the training of the observer-coder, it became evident that the memory and convergent thinking behavior categories were very difficult to distinguish for these less mature students/children. The non-verbal categories suggested in reference to Moustakas, Sigel and Schalock (1956), Good and Brophy (1971), and Turner (1972) were found to be too general "catch-alls", and were therefore omitted. The non-verbal communication that occurred was included in the verbal categories of the scheme. A number of other categories were also excluded from the analysis because of lack of behavior falling in these categories. From these findings a revised interaction analysis instrument was developed, with accompanying decision rules and definitions.

The method of coding the behavior on the basis of interacts; as suggested by Weick (1968), Baumrind (1968), and especially Medley and Smith (1964)and Cherry (1975) proved satisfactory. Also, the unit of time as the number of minutes that it was possible for the child to interact with the teacher, as suggested by Cherry (1975), proved satisfactory.

The intra-judge reliability of the interaction analysis was measured using Moustakas'(1956) formula and Rosenshine and Furst's

(1973) suggestions. This reliability was based on observing taped interactions using one judge. The validity of the measure was assured by an extensive and careful training procedure, and a link of within classroom observation with the coding.

On the basis of an extensive literature review, three separate measures of self-concept for pre-school children were developed:

1) a teacher's report of the child's self-concept measure,
2) a child's self-reported evaluative self-concept measure, and
3) a child's self-reported descriptive self-concept measure.

These measures were chosen on the basis of Coller's (1971) suggestion that self-concept can be defined in terms of evaluative and descriptive modes. Coopersmith (1959, 1967), Fiske (1963) and Coller (1971) also suggested that a combination of subjective (self-report) and observer evaluations should be used as the basis for measuring self-concept. However it was found that the child's self-reported evaluative self-concept measure was not internally consistent. Combs and Soper (1963) suggest that the self-report measures may not be reliable for a number of reasons, three of which may apply here: willingness of individuals to cooperate, social expectancy, and feelings of freedom from threat. I would also suggest that the data inconsistency for this measure may be due to testing error or possible tester bias.

It was also found that either because of teacher bias or because of the fact that the child's self-reported descriptive self-concept measure and the teacher's report of the child's self-concept

measure different constructs, these two measures were not related. This supports the Combs and Soper (1963) finding that there is no relationship between the self-concept of children assessed by behavior observations (teacher reports) and the self-reports obtained from the children; and also supports the Coller (1971) suggestion that it is inappropriate to validate one self-concept measure by comparing it with another self-concept measure.

The teacher report of child's self-concept measure items were based on an instrument developed by DiLorenzo (1969). The items in both of the child's self-reported self-concept measures were based on Dysinger's (1970) work.

In the analysis of the data with the addition of the profiles of each child, it became clear that "hard data" alone do not always give a clear picture of the child.

In summary, the general methodological implications of this thesis are that:

1) Based on a theoretical definition of meaningful learning process, meaningful learning processes can be operationalized and reliably measured.

2) Based on a theoretical definition of supportive/nurturing teacher behavior, an indicator of this concept has been developed.

3) Based on a theoretical definition of self-concept, the self-concept of a pre-school child can be operationalized and reliably measured.

4) The child self-report measure of self-concept is possibly measuring a different construct than the teacher report of child self-concept measure, because these two measures were not positively related.

V.2 Theoretical Conclusions and Implications

Meaningful learning processes were defined as involving the child as a total being in his environment, and in his understanding of himself and his world. Meaningful learning processes take place in interaction with others. Meaningful learning also covers three types of stages: presage, process and product. The presage stage covers the characteristics of the educator and child before they enter an educator-educand interaction. The process stage covers the child/educator interaction and the various initiations and responses of the educator and child. The product stage of meaningful learning covers an indication that a meaningful learning process has occurred. The product of a meaningful learning process can be seen in relation to either a physical or a social environment, and can be seen in a new understanding of the environment (cognitive development) and/or a new understanding of self in relation to the environment (affective development).

Based on a literature review the following properties characterize meaningful learning processes:

1) the child is <u>actively</u> involved in the learning process;

2) the motivation to learn comes from the learner, is related to his own purposes and needs, and may result in new needs being created;

3) the learning is self-initiated.

A number of supporting circumstances for meaningful learning to occur were also defined as:

1) the educator is needed to help the child;

2) the educator's and child's behavior will be integrated;

3) the background of both educator and child influence the learning process;

4) meaningful learning contributes to the development of a sense of self (as the basis for personality development);

5) the learning takes place in situations free from others' criticism;

6) an accepting and nurturing relationship exists between the child and the educator.

The main theoretical sources of the above definition of meaningful learning are Allport (1967), Moustakas and Perry (1972), Rogers (1967), and Schmidt (1973). Langeveld (1964), Schmidt (1973) and Saxe and Stollak (1971) described curiosity behavior as that embarked upon by the child in order to understand himself and his surroundings, in search of meaning. A number of other sources identified a supporting and nurturing adult (educator) as fostering self-initiat-

ed (curiosity) learning for a child, and suggested that this is an important process in the positive development of a child. The main sources here were White (1972), Minuchin (1971), Hanson (1975), and Eldardo, Bradley and Caldwell (1975). These theorists emphasize a reciprocal relationship between the child and his environment, that the child must be motivated to learn from his own needs, and therefore meaningful learning affects the child's sense of self.

In looking at the findings in light of the first stated expectation, it was found that meaningful learning processes for a young child will more likely take place in interactions with nurturing and supporting educators.

It was found that the quality and quantity of child initiation are integral components of meaningful learning processes. It had been suggested by Yarrow and Waxler (1971), Good and Brophy (1971) and others that educators relate to and interact with different children differently. This was supported by the findings in this thesis, for a clear continuum of interaction was observed for the six selected boys.

From a review of the self-concept and development of self literature, it was suggested that there is both an evaluative and a descriptive component of a child's self-concept. This was based on Rogers (1961), Mead (1956) and Coller (1971). The development of a sense of self was also defined as an indicator of affective development. However, the findings from this thesis could only define the descriptive self-concept component, using both a child self-report method and a teacher-report method.

In terms of the second stated expectation, it can not be stated that meaningful learning processes for a child in interaction with an educator will be related, always and consistently, to the development of a more positive self-concept for the child. However there is some indication (for three of the six boys in this thesis) of a relationship between meaningful learning processes and the development of a more positive self-concept.

V.3 Implications for Early Education

It has been found that not only can meaningful learning for a young child be defined, operationalized, and measured; but that meaningful learning can be "meaningful" because of its possible relationship to the development of a child's sense of self. These findings have implications for educators of young children; teachers, institutions that train teachers, and especially parents.

The most important implication from this thesis for educators and educators of educators is that the most relevant impact on the child is not the content of what is being taught; but rather the relationship between the educator and child, and the impact this relationship may have on the child's motivation and sense of self. An extreme example could be when the educator has "successfully" taught a child how to multiply, but in the process has destroyed the child's self-respect, lowered his esteem of himself, and made learning such a negative experience that the child will not want a similar experience again. The end product of this learning process would not be meaningful learning and would be, in the long term, very destructive.

The most productive route in the child-educator relationship is an over-all accepting and nurturing relationship, free from criticism (particularly free from criticism of the child himself). Therefore, it is suggested that educators focus on supporting the child in his learning process by using nurturing and positive initiations and responses; so that the child will feel good about himself and be motivated to further development of self.

All children are born with the desire to explore and, in fact, to learn. The educator (parent or teacher) should then focus on helping the child to do just that; to explore, to investigate, and to initiate his own learning experiences. An educator can also develop a suitable environment and materials, and subtle support to help the child in his learning. Meaningful learning is long-lasting for it has an impact on the child's development of self; and this learning will be most positive when it is self-initiated. This is the next important implication; the educator's role is to help the child initiate his own learning process where he is actively involved in the process. Therefore it is suggested that educators focus on prompting, accepting and rewarding child initiated learning.

Another important implication is that educators should focus on developing and maximizing the child's critical and creative thinking capacities, and not on destroying individuality. It has been said much too often that the traditional school systems may produce "intelligent" and "knowledgeable" children, but these children have very often lost their inherent creativity in the process.

The last implication that I would like to focus on is that the educators must realize that they react to different children in different ways; and that this reaction is circular and integrated with the child's action and reaction. If the relationship between the educator and the child does not develop into a positive, nurturing and accepting one; it is the educator's responsibility to break this reaction circle. Educators should also be aware that often their relationship with children is based on the characteristics of the educator and the child.

The above implications should be conveyed to parents and teachers by various media and in-service means, so that they may incorporate this study's findings into their relationships with the young children they interact with. The training institutions for teachers of young children should also incorporate the findings of this thesis in their definition of competent teachers; that is, teachers who are competent to develop meaningful learning processes.

V.4 Limitations

One of the more important limitations to this study is that more background information may have been useful in understanding the development of each of the six boys.

Another limitation was the conditions required for VTR taping. In order to use VTR tapings, a classroom with quite alot of control had to be used to obtain acceptable sound quality. This may be one of the reasons why some of the theoretically identified meaning-

ful learning process variables were not analyzable because of too low frequencies (for example, the child initiation categories).

The suggestion that the main reason the two internally consistent self-concept measures were not related was because they were measuring different constructs, leaves me a little dissatisfied. I think the main reason the two measures were not related is because of teacher bias in report (possibly a "halo effect"). It may be that the researchers' assessment of self-concept would have been related to the child's reported self-concept. This could be assessed by further research.

Of course, it should be remembered that the specific findings of this thesis can only be directly related to similar classroom situations and pre-school aged boys. However, it is felt that the broad findings of what is meaningful learning and its relationship to the child's sense of self have implications for all educators working with children, including parents.

V.5 Further Research

One area of results from this thesis that should be followed up is a further testing of the interaction analysis categories (the basis of the summary meaningful learning indicator), using more children and different teachers. It may be that teachers who use a less directive approach with their children, may allow interaction coding in the categories that were eliminated from this study because

of low or no frequencies. Along with a further testing of the interaction analysis, would be the accompanying development of more complete profile descriptions of the children involved.

Relationships between variables were expected in this study. Further investigation could be done as to whether meaningful learning processes and the development of a self-concept are statistically related.

Also, the re-assessment of an evaluative dimension of the self-concept measure is necessary, in order to determine whether the measure is actually unreliable or whether some testing bias affected the results of this present study. Also, as suggested above, it may be that the researchers' assessment of self-concept would be more closely related to the child's self-reported self-concept that the teacher's assessment of self-concept. Therefore more research needs to be done in terms of exploring the suggested child self-concept measures' validity in relation to another measure.

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APPENDIX A

LESSER SLAVE LAKE AREA PRESCHOOL PROGRAM PROJECT

PHASES I AND II

APPENDIX A

LESSER SLAVE LAKE AREA PRESCHOOL PROGRAM PROJECT

PHASES I AND II

PHASE I - PILOT PROJECT I, 1972

The following section contains brief excerpts from the Lesser Slave Area Preschool Program Project, Phase I report.

INTRODUCTION

In the fall of 1971 a preschool program was initiated in the Lesser Slave Lake area of Alberta by the High Prairie School Division No. 48 in co-operation with the Lesser Slave Lake Preventative Social Services, as part of the Alberta Innovative Projects.

A coordinating committee was set up composed of Mr. G. A. Lagore of the High Prairie School Division; Mr. L. Anderson, Director of the Lesser Slave Lake Preventative Social Services Board; and, Mrs. Pat Larson, the appointed project coordinator, to establish parental involvement in the program, establish the program design, maintain its controls and evaluate its success.

In the spring of 1972 the Department of Culture, Youth and Recreation was asked by Mrs. Larson to assist in the evaluation of the preschool program for the 1971-72 school year. Representatives of Preventive Social Services, School Division, Culture, Youth and Recreation, and Mrs. Larson, the program coordinator, met on April 12,

1972 to set the parameters of the evaluative project. After this time the evaluative instruments were selected and the evaluation was implemented on May 8, 1972 and completed by June 9, 1972.

There are five communities and eight classrooms involved in the Innovative Projects Lesser Slave Lake Preschool Program. There were four classrooms in Slave Lake, housed in the same building. The four other communities were Canyon Creek, Joussard, Faust and Kinuso. The program evaluation focused on 117 preschool children in these communities who would be attending grade 1 in the 1972-73 school term and their development as a result of the program, and the evaluation of the program by their parents, by their teachers, and by the parent committees in their communities.

THE PROJECT AND PROGRAM OBJECTIVES

The major objective of the evaluative project was to help provide direction for the planning and development of the preschool programs in the Lesser Slave Lake area, most urgently for the school year 1972-73. The evaluation was to focus on the major objectives of the program, especially the first one listed:

1) social development of the child which includes parent-child development (affective development)
2) developing parental involvement in the child's education
3) cognitive development, in terms of offering new and different experiences to the children, linguistic development and the development of expressive abilities
4) providing education re good health and nutrition habits.

The major assumption of the program, which lends support to its objectives, was that a firm and positive relationship between children and their parents, their peers, and their teachers (which is social and affective development) is facilitative to a rewarding experience (cognitive development) within the school situation[1]. What is meant by parent-child development is determined by the need and situation within each community. It is assumed that as the child develops in his experience with the program, the parents will also be benefit from their child's and their own involvement.

The characteristics of the population of the Lesser Slave Lake area present an urgency for the need of evaluation and development of the preschool program. The area has a relatively new population with high mobility and is approximately 30-40% native. The children frequently come into the school system from deprived surroundings, and tend to be both cognitively and socially disadvantaged. Therefore, a very relevant outcome of the program is seen as preparation of children for successful school experiences. There is a need for developing more relevant educational programs, and integrating the expectations of parents and educators at all levels of education.

[1]Piaget, J., 1961, "The Relation of Affectivity to Intelligence in the Mental Development of the Child"; Bulletin, Menninger School of Psychiatry, March 13/63.

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METHOD AND METHODOLOGY

The evaluative instruments used are defined by the program objectives and the people involved in the program. The instruments used were:

1) VTR tapings of seven classrooms, analyzed using a modified version of Flanders' Interaction Analysis Categories.
2) a semi-verbal paper test for the preschool children measuring their perceptions of the preschool generally, subject areas, classroom activities, and relationships with peers, teachers and parents (from Dysinger's When Do I Smile Test).
3) an evaluation of each individual child's progress in the program re program objectives, by the teacher.
4) a questionnaire for parents to determine their evaluation of the realization of program expectations, their and others' involvement, the development and reaction of their children to the program, parent-child development, transportation, the work by the parent committee, the preschool facilities, teaching staff, program content, and recommendations for the future.
5) a questionnaire for the teachers measuring similar areas to those measured by the parents.
6) a questionnaire for the parent committees measuring similar areas to those measured by the parents and teachers.

SUMMARY FINDINGS

Two of the objectives of the Lesser Slave Lake Preschool Program were met in terms of the evaluation carried out. The majority of parents, teachers and parent committees agreed that the children in the preschool developed adequately in the social (affective) and cognitive areas. These groups also agreed that the program provided education to most children in terms of good heath and nutrition habits. However, the parent-child development objective was only marginally realized and the amount of parental involvement was not satisfactory to the majority of any of the groups concerned. These areas (parent-child development and parental involvement) suggest where the emphasis of the program should be placed for the following school year, 1972-73.

The Phase I pilot project was a post-facto evaluation, however, the project allowed the evaluator to test some developmental instruments and offer some statement as to differential program success in different communities and in the general program.

PHASE II - PILOT PROJECT II, 1973

The Phase II evaluation of the Lesser Slave Lake Area Preschool Project focused on:

1) the Phase II preschool program effects in terms of child development, parental involvement and related factors.
2) a follow-up of the preschool children from Phase I, as to the longitudinal effects of Innovative Projects Preschool experience, "other" preschool experience and "no" preschool experience into grade one.

The modified Phase I Child Self-Report form was developed and

used to test the change in descriptive and evaluative self-concept of approximately 150 preschool students, on a pre and post-test basis. The changes made in the Phase II form were: separation of girl and boy items, elimination of overlapping and ambiguous items, and addition of some more meaningful items. In the experience of testing these preschool children, the ability of the preschool children to differentially use the response modes of the child self-report form was confirmed. The children's self-report pre- and post-test data was factor analyzed (using an image analysis), and valid and relatively stable "general attitude toward school" and "perception of interaction with teacher' factors were isolated. The "evaluative self-concept" factor was identified, but was found to be of questionable reliability at the Phase II testing period.

The Flander's Interaction Analysis was used both for Phase I and Phase II. In coding the Phase II interactions, it becomes very evident that most of the data relevant to child development was being missed by focusing on the teachers' interactions with their classes. Therefore, it was recommended that in future studies, an interaction analysis focusing on dyadic interacts would probably be more useful to a child development analysis.

The specific findings of the Phase II report concerning program development have not yet been completed.

PHASE III - PILOT PROJECTS III, 1974

An analysis of program effectiveness is continuing in the Lesser Slave Lake area; Phase III is focusing on the evaluation and

description self-concept development of approximately 240 preschool children. Both the child self-report and teacher report forms presented in this proposal have been used to collect the pre-test data in this area.

A similar study is also being carried out in the Forest Heights - St. Bernards area of Edmonton. The focus for the Edmonton evaluation will be to analyze what is presently occurring in a project that was initiated in 1971 for kindergarten through to grade 3.

APPENDIX B

DEFINITION AND DECISION RULES

FOR REVISED INTERACTION ANALYSIS

APPENDIX B

DEFINITIONS AND DECISION RULES FOR REVISED INTERACTION ANALYSIS

Note: Only those interaction categories requiring clarification are presented here.

1.1 Restrictive here means, not open, or limiting the type and kind of response possible. Usually a one word answer is expected. An essential statement of information, for example: "I need glue".

1.2 Interpretive or creative, means that at least an analysis or possibly a new orientation is requested. An example of a creative statement woud be "My! The sun sure does look orange today".

1.3 Seeking Support Questions or Statements

Examples: "How's this Miss_____?", "Miss_____!", "Look at my picture".

1.4 Miscellaneous Routine Questions or Statements

Example: interrupted initiation, "I know, I know!","B!"

1.5 Gestural Initiation

For example: pulling on sleeve, poking, patting, wave, putting up hand or standing up.

Generally there was difficulty in determining who was initiating if a child's hand was up, and then teacher asks this child a question. Therefore the following sequence was used if a teacher asked a group question, a child put his hand up, and then the teacher repeated the question to the individual child: 3.1, 1.5, 3.1.
Also a raised hand was not coded as 1.5 unless the teacher acknowledged the child.

1.5 was coded if the student had his hand up when the teacher asked a question, regardless of whether the raised hand seemed to attract the teacher's attention. If this is not followed the coding becomes too subjective and this leads to poor reliability. If the student cannot be seen when the teacher asks the question, the possibility of a raised hand is ignored.

2.1-2.3 There was general difficulty in differentiating between memory and analysis responses. Guilford's examples and definitions are not of much help, because they apply to more mature students. Therefore the final instrument was revised to include restrictive, interpretive and creative categories. The restrictive category includes what doesn't fit in any other category, mainly statements of fact. The interpretive category includes those items which seem to require analysis before an answer is given. The creative category requires a new orientation to the original question, or

taking off on a possibly related but new train of thought. An example of a creative statement would be "This ball is round, just like the moon".

2.1 Restrictive

This category is used in cases where a child counts out loud or names objects for "show and tell".

2.4 Miscellaneous Non-verbal Response

Examples: shrug, nod, shake head.

2.6 Non-verbal Compliance

Usually follows teacher giving directions (3.5).

3.1 Asks Restrictive Question

Is defined by the situation where child is expected to give only one answer.

Examples: "Yes", "No" expected answers.

"What is this letter?" "Name the day, or month"

"Which is Little John?" "What is this shape?"

"What comes after 19?"

Code 3.1 if teacher says child's name, and the child answers aloud - because it is felt the class question is implied.

3.2 Asks Interpretive Question

The child is to do some analysis with a number of options open: Examples: "What is that?" "What is a word that starts with the letter t?" "What should I write on your

picture?" Whenever the teacher says a child's name and nothing more, it is coded as 3.2.

3.3 Creative Question or Statement

An example of a creative teacher statement could be: "I wonder why the water in the jar seems less today than it did yesterday".

Teacher initiation (primarily 3.1, 3.2 and 3.3) which follows child initiation (primarily 1.1, 1.2, or 1.3), does not necessarily mean that the teacher has ignored the child, but rather than she acknowledges his question and reorients him by asking a question of a similar type.

3.5 Gives Directions, both Verbal and Non-verbal

Examples: pushing or pulling to a different location, pointing with finger.

This category is used only when the teachers give very specific (verbal) directions, and only for teacher initiation.

3.6 Criticizes or Corrections

Examples: "Jimmy, sit up! ... look up! ... quite!"

4.1 Reiteration

Continuance of sentence. This category does not include praise.

4.2-4.3 These category definitions are basically the same as Flanders' (1970) definitions.

4.4 Information Giving, Clarification

The statement coded in this category must be longer than

three or four words. If 4.7 is followed by 4.4, code as 4.4 only.

4.5 Corrective Ploy or Put-off

Examples: shakes head or ignores child after she has said "just a minute please".

4.6 Non-response

When response is expected. This category is used carefully in large classrooms, trying to interpret deliberateness of teacher's actions.

4.6 is used after a child initiates, but the teacher does not answer. If the teacher ignores a child's answer and asks the same question of a different child, the first sequence is coded as 3.1, 2.1, and 4.6.

4.7 Positive Verbal or Non-verbal Consent or Acknowledgement, of fewer than three words.

If teacher says: "Just a minute please" to child and then pays attention to the child, code response as 4.7. If teacher says: "Okay", etc. before her question code as 4.7 and then her initiation. Examples: Short statements such as "Yes", "Okay", or nodding of head, after an interaction between teacher and child, or when child asks teacher a question or child has responded to the teacher's question.

If teacher does not say anything as a response, but non-verbally acknowledges child by writing his suggestion on blackboard, code as 4.7.

APPENDIX C

TEACHER REPORT ON CHILD SELF-CONCEPT

Appendix C

Teacher _____
Date _____
Name of Child _____
Sex of Child _____

TEACHER REPORT OF CHILD SELF-CONCEPT POST

Please rate the child on each of the items below.

Remember: Rate all children in your class on Item 1 first, then all children on Item 2, etc.

	Never 1	2	3	4	5	Always 6
A. MATERIALS						
1) Is creative in finding unconventional uses for materials and equipment.						
2) Sees self as being quite capable of mastering new situations.						
3) Responds well to the use of artistic materials and is confident about his ability to use such items and to produce what he considers art.						
4) Responds well to the use of musical materials and is confident about his ability to use such items and to produce what he considers music.						
5) Considers himself readily able to verbally express his opinions and/or describe situations and experiences.						
6) Sees himself as able to perform large motor activities well.						
7) Masters his personal clothing -- is able to dress himself well -- and considers himself as being quite capable in this respect.						
B. PEERS						
1) Is free from self-consciousness, and is not easily embarrassed when relating to peers.						
2) Invites others to play, and devises ways to share equipment.						
3) Shows appreciation for classmates, and considers himself well-liked in return.						
4) Sees himself as able to assist classmates experiencing some kind of difficulty.						

C. TEACHERS

	Never 1	2	3	4	5	Always 6
1) Regards himself as genuinely helpful to the teacher, voluntarily as well as upon her request.						
2) Reacts positively to teacher's directions.						
3) Feels comfortable about physical contact with teacher.						
4) Feels the teacher thinks well of his accomplishments.						
5) Is curious about things said and done by the teacher and pursues these and related issues.						
6) Relates to the teacher frequently by smiling or kidding.						
7) Feels he is well-liked by the teacher and appears free from anxiety in his relationship to her.						
8) General Outlook of Child-Happy						Sad

D. COMMENTS

E. The following ratings will be used to assess how realistically a child perceives his ability in certain areas. The same questions have been asked of all the children.

Please check appropriate column.

How well does this child do in:	Poorly 1	Okay 2	Really Well 3
1) running and jumping			
2) music			
3) painting			
4) telling a story			
5) listening			
6) playing with boys			
7) playing with girls			
8) getting along with his teacher			
9) dressing himself			

APPENDIX D

CHILD SELF-CONCEPT FORM

APPENDIX D

CHILD SELF-CONCEPT FORM

PART A

Instructions

Warm-Up Questions

a. How well do you use scissors?
b. How well do you draw a flower?

1. How do you do in running and jumping?
2. How do you do in music?
3. How do you do in painting?
4. How well do you tell a story?
5. How well do you listen?
6. How well do you play with boys?
7. How well do you play with girls?
8. How well do you get along with others?
9. How well do you dress yourself?

PART B

New Instructions

Warm-Up Questions

a. How do you feel about eating chicken noodle soup?
b. How do you feel when you fall down?
c. How do you feel about playing with blocks or a ball?

1. How do you feel when you are in school?
2. How do you feel about playing games in school?
3. How do you feel about making something with clay at school?
4. How do you feel when you have music?
5. How do you feel about telling a story at school?
6. How do you feel about listening to a story?
7. How do you feel when everyone is moving around and talking?
8. How do you feel when the teacher has you work by yourself?
9. How do you feel when the teacher makes everyone keep quiet?
10. How do you feel when the teacher has you work with other children?
11. How do the boys in your room feel about you?
12. How do the girls in your room feel about you?
13. How does the teacher feel about you?
14. How does the teacher feel about the boys in your room?
15. How does the teacher feel about the girls in your room?
16. How do you feel about the teacher?
17. How do the boys and girls in your room feel about the teacher?
18. How do you feel when you ask your mother or father questions?
19. How do you feel when you help your father or mother at home?

CODE _____
NAME OF CHILD _____
CLASSROOM _____
SEX _____
INTERVIEWER _____

CHILD SELF-CONCEPT FORM - ANSWER SHEET POST

PART A

Instructions

2 Warm-Up Questions

	Poorly 1	Okay 2	Really Well 3
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			

COMMENTS:

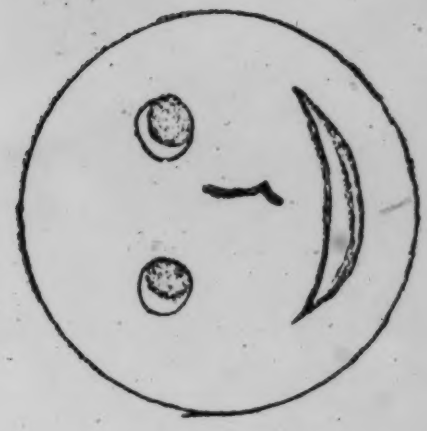
PART B

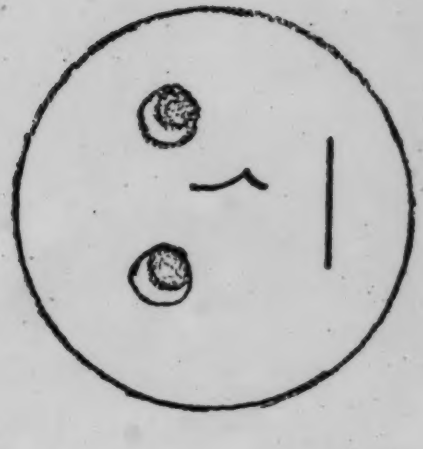
New Instructions

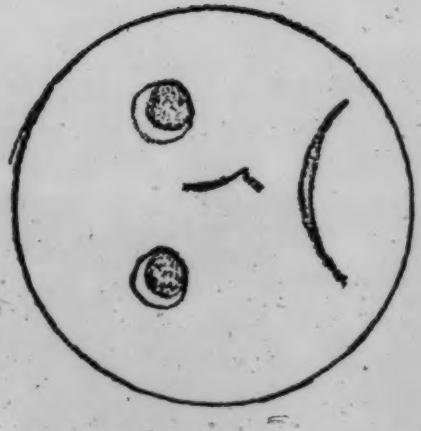
3 Warm-Up Questions

	Unhappy	Don't Care	Happy
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			

Attitude on Day of Test:







APPENDIX E

SMILE TEST - GENERAL INSTRUCTIONS

APPENDIX E

SMILE TEST - GENERAL INSTRUCTIONS

1. Get to know the child; spend some time with him talking about things that interest him. Gain his trust as much as possible. Be friendly and approachable.
2. Explain generally to the child what you are going to do. (e.g. A game of questions.) It is important that he/she not be afraid of you or the questions.
3. If there are any problems in testing, i.e. the child didn't seem to understand the instructions, didn't seem interested in cooperating, or didn't understand an item, please indicate this in the "Comment" column of the response sheet. Also please indicate if the child seems to be randomly responding rather than answering how he really feels.
4. Always pick up the child from his/her classroom and return him/her to his/her classroom. Do not expect him/her to come to you on his/her own.
5. Ask the child not to talk to the other children about the tests.
6. Turn in your completed forms immediately.
7. Turn in extra copies and equipment when the interviews are complete.
8. If you are confronted with questions or problems you do not understand or cannot handle -- please call.

SMILE TEST ADMINISTRATION

Part A. These questions are set up to determine the child's attitude toward himself. Describe to the child that most people do some things 'really well' and some things 'not very well' or 'poorly'. It might help to give him an example of something you, yourself, do well or poorly. Make sure the child understands with the two sample questions, then go on to the test questions.

PART B. These questions are set up to determine the child's general attitude toward school. Show the child the sheet with the faces and describe to him that the first one is an 'unhappy' face, the next is a 'it doesn't matter' or 'don't care' face, and the third is a 'happy' face. After explaining, make sure the child understands by having him tell you what the faces mean to him. At this point you may correct him. If the child feels more comfortable responding verbally and does not want to use the face sheet, do not insist. Again, give the sample questions, then go on with the test.